



Manual

Analogue NTP Clock

diameter 400-900 m.m

With Power-Over-Ethernet connection

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WESTERSTRAND URFABRIK AB

P.O. Box 133
SE-545 23 TÖREBODA

Tel. +46 506 48000
Fax. +46 506 48051

Internet:: <http://www.westerstrand.se>
E-mail: info@westerstrand.se



General

Westerstrand Analogue NTP Clock with Power over Ethernet (PoE) connection provides the possibility to create a time distribution system with high accuracy and high reliability.

Initial setting function and error correction is automatic. The movement starts automatically after reception of correct time.

The hour hand is sweeping and minute hand is stepping.

LAN connection

The NTP clock is equipped with a RJ45 (10BASE-T) connector for direct connection to the LAN via a Power-Over-Ethernet switch.

Each clock has a unique IP address. The IP address, gateway, subnetmask etc can be set manually (static IP) using a web browser (or telnet) or it can be set automatically using DHCP (dynamic IP).

The clock has standard IP address 192.168.3.XX and sub network mask 255.255.240.0.

XX could be between 10 up to 200. The IP address is on a label at the clock housing.

Power-Over-Ethernet

Power-over-Ethernet (PoE) is a network standard based on IEEE 802.3af that provides a means of delivering power to devices connected to the LAN. This technology eliminates AC electrical wiring, wall transformers, allows centralised UPS backup, and is fully compatible with both powered and non-powered Ethernet devices.

In addition to providing time synchronisation and control over Ethernet, PoE enabled Ethernet cable provides power to the clock. System installers need run only a single Ethernet cable that carries both power and data to each clock. This allows greater flexibility placing clocks and, in most cases, significantly decreases installation costs.

Westerstrand clocks are fully compliant with the IEEE 802.3af standard for providing power over Ethernet.

NTP

To distribute correct time to different users in a Local Area Network (LAN) the Network Time Protocol (NTP) can be used. NTP is a part of the protocol family TCP/IP. The unit that sends out the time is called NTP Server and the clock that receives the time is called NTP Client.

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Functional description

After connection of the network cable, the hands are driven to the position 12:00. When the hands have reached this position the hands will be stopped and wait for the correct time. The hands will not move until the time code has been accepted. After the receiving process has finished the hands are driven to show the correct time and the movement starts normal run. The total start up time is approx. 10 minutes.

A correction is done if necessary (when a difference between received time and displayed time occurs). The correct position of the hour hands is checked two times per day and one time each hour for minute hand.

If the NTP signal disappears, the clock continues to work by means of the built-in quartz crystal.

Installation

- 1. Connect the network cable.**
- 2. Configure the clock using a normal web-browser.**

Please note that if the default settings is used no configuration is needed.

If the IP address is unknown please use the RASER software to search for the clock.

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Configuration using a WEB-browser

Password

A password is required. Always enter user *admin*. Default password is *password*. If the first letter of the password is blank no question about user and password will appear.

If you forget the password, then start TELNET. The last line shows a number of characters within square brackets []. Contact Westerstrand and enter this value.

Anslut till 192.168.14.201

Användarnamn och lösenord krävs för servern 192.168.14.201 på Klockan höger om kartan..

Varning: Den här servern begär att du ska skicka ditt användarnamn och lösenord på ett sätt som inte är säkert (grundläggande autentisering utan säker anslutning).

Användarnamn:

Lösenord:

Kom ihåg lösenordet

OK Avbryt

After login a list of functions is displayed:

Westerstrand Urfabrik AB
Box 133
SE-545 23 Töreboda, Sw
Tel: +46 (0)506 48000

Westerstrand
Sweden

Status >>
General >>
Network >>
NTP >>
Help >>



Status >>

Show status of the clock.

Westerstrand NTP Clock

Westerstrand Urfabrik AB
Box 133
SE-545 23 Töreboda, Sweden
Tel: +46 (0)506 48000

IP=192.168.3.40
MAC=00-90-C2-D3-C5-DF
NTP server=192.168.1.237

UTC=2010-04-07 09:54:56.142
LT=2010-04-07 11:54:56.142 Wed (Summer)
Country=CET (UTC=60 min.)
Summertime from 25 Mar, Wintertime from 25 Oct
Pointers= A 11:54:00, B 11:54:00
Number of timesettings=7

No Alarms

Uptime=376 seconds
Firmware=NUR-A136 (Jan 27 2010 13:11:06)

Status >>
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IP= The IP address of the clock
MAC= Unique address. Always 00-90-C2-aa-bb-cc. The last 3 numbers (aa-bb-cc) are found on the network card, e.g. D3-C5-DF
UTC= Current UTC time
LT= Current Local time
Country= Country code (CET = Central European Time)
NTP server= Address of NTP server
Number of time settings= 7 (The clock has been synchronised 7 times)
Uptime= 376 (The clock has been running 376 seconds since the last power failure or reset)
Firmware= Firmware version

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Network >>

Enter general network parameters.

Network

DHCP	<input checked="" type="radio"/> Off <input type="radio"/> On	IP fallback	192.168.14.80
IP	192.168.14.80	Subnetmask	255.255.240.0
Gateway	192.168.1.1		
DNS	192.168.1.5		

SNMP Setting

SNMP	<input checked="" type="radio"/> Off <input type="radio"/> On
SNMP server	192.168.14.1

Wait 15 seconds after [Save and restart], then press Refresh

DHCP Off – Static IP address according to IP below.
 On – DHCP IP address with fallback according to IP fallback below.

IP/IP fallback IP address

Gateway Network gateway

Subnetmask Network subnet mask

DNS IP address of DNS server

SNMP If SNMP is ON the clock will send SNMP traps to the selected SNMP server. The clock also will answer SNMP poll requests. Please contact Westerstrand for more information about SNMP and MIB-files.



NTP >>

NTP

DHCP option 042 Off On

NTP server

Country ▼

Interval(s)

NTP mode

NTP Server Select NTP server, e.g. *192.168.1.5* or as an URL *ntp1.sp.se*.

Country/Timezone Select country. A NTP server sends UTC time. The clock will correct this to local time and adjust for DST (Day-Light-Saving) automatically. A rule for DST (daylight saving time) for each country is hard coded in the firmware.

Country	Winter	Summer	Timezone acronym
GBR	UTC+0	UTC+1	WET/WEST
CET	UTC+1	UTC+2	CET/CEST
FIN	UTC+2	UTC+3	EET/EEST
ARE	UTC+4	UTC+4	United Arab Emirates

Interval Interval in seconds between NTP requests. (Used in client/server mode only).

Help>>

A help file in PDF format is displayed.



RASER

This program are used for finding network clocks. RASER sends broadcast messages on UDP port 9999. All Westerstrand Ethernet controllers will answer.

Install with setup file SETUP_RASERxxx.EXE (xxx=version e.g. 105). Icon 'RaSer' is created on the desktop. Start the program. Click on button [Help]. Manual RASER.PDF is displayed. Check this manual for further information.

Find a Westerstrand Ethernet module

1. Set firmware mask. Examples:

- * Search all Westerstrand Ethernet modules (default)
- L-H Search only modules with firmware text NUR as first letters, e.g. NUR-A136

2. Set IP mask. Examples:

- 255 Broadcast to all, i.e. 255.255.255.255 (default)
- 13 Only show answers from segment 255.255.13.255

3. Click on button [Search]. The box becomes green. Program RASER will timeout after 5 seconds. Break a search by a click on [Break].

Example: Here a search for all modules with firmware 'NUR*' was made. Total 24 module were found, but only 2 corresponds to mask 'NUR'



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Parameters

Set parameters in selected clocks. . Please contact Westerstrand for more information about parameter setting using RASER.

More functions

If the info window is right-clicked more functions are displayed.

[Clear]	Blank the info window
[Log communication]	Logg communication. Test.
[About]	Show program information

