Zennio NTP Clock Master Clock Module User Manual

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Zennio NTP Clock Master Clock Module

INTRODUCTION

A variety of Zennio devices incorporate a NTP Clock module, specifically, the families ALLinBOX and KIPI. This module allows the device to be configured as the installation's master clock, sending the date and time information synchronized with the information obtained from an NTP server. The following sections describe the parameters necessary to configure the servers and the adjustments that can be made to the obtained date and time. In addition, different date and time sending options can be set.

GENERAL CONFIGURATION

It would be possible to configure a list of up to two NTP servers with which to synchronize date and time information. For this purpose, the device will send requests to the first server in the list, if some error is detected, the second one configured will be used. If any of them is a valid server, no date nor hour would be obtained and therefore no object would be sent to the bus. The local time of the device will be ruled by the configured time zone, being able to select a custom time zone with an offset in minutes with respect to the UTC time of the server. Additionally, and since some countries contemplate the summertime change as an energy-saving method, this possibility can be activated and configured.

ETS PARAMETERISATION

After enabling Synchronize Clock Master via NTP from the “General” tab of the product to configure, a new tab is added to the left tree, “NTP”, along with two subtabs, “General Configuration” and “Sendings”. Also in the “General” tab of the device, the configuration parameters of the DNS servers are shown. It will be necessary to have valid values for the correct operation of the NTP clock, especially if the NTP server is configured as a domain, i.e. a text, since the DNS server will be consulted for the IP address of this NTP server.

DNS Servers Configuration:
numeric text fields to enter the IP address of two DNS servers: IP Address of DNS Server 1 and 2 [198.162.1.1, 198.162.1.2].

Figure 1. NTP General Configuration.

Note:
Most routers have DNS server functionality, so the router’s IP, also known as the gateway, can be configured as server. Other option would be an external DNS server, for example “8.8.8.8”, provided by Google.

The “General Configuration” subtab provides the parameters for the configuration of the NTP servers and time settings.

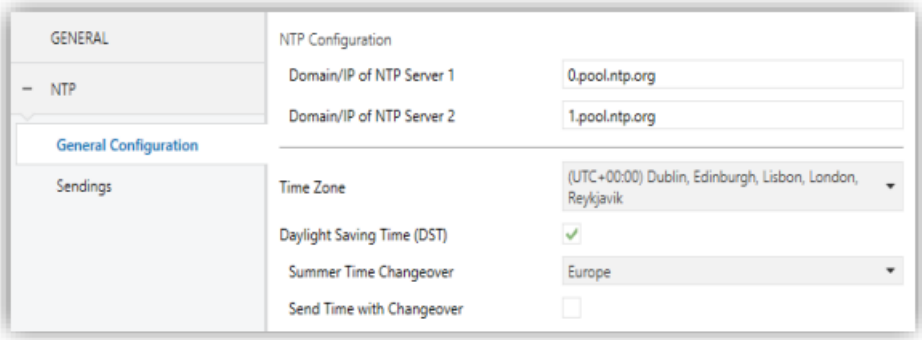

Figure 2. NTP General Configuration.

NTP Configuration:
text fields with a maximum length of 24 characters to enter the domain/IP of the two NTP servers. Domain/IP of NTP Server 1 and 2 [0.pool.ntp.org, 1.pool.ntp.org].

Note:
An IP can be configured in this field, so that the NTP request will be made directly to the server, without querying

the DNS server.

Time Zone
[(UTC+0000) Dublin, Edinburgh, Lisbon, London, Reykjavik / … / Custom]: parameter to select the time zone according to the geographical location of the device. If “Custom” is selected, a new parameter will be displayed: Offset [-720…0…840] [x 1min]: time difference with respect to the UTC time of the server.

Daylight Saving Time (DST) [disabled/enabled]:
enables the functionality to activate the summer or winter season. If this parameter is enabled, the time will be automatically updated when the summer period starts and ends. In addition, the following parameters will be displayed:
Summer Time Changeover [Europa / USA and Canada / Custom]: parameter to select a time changeover rule. In addition to the main ones (European or American), a customized time changeover rule can be defined:

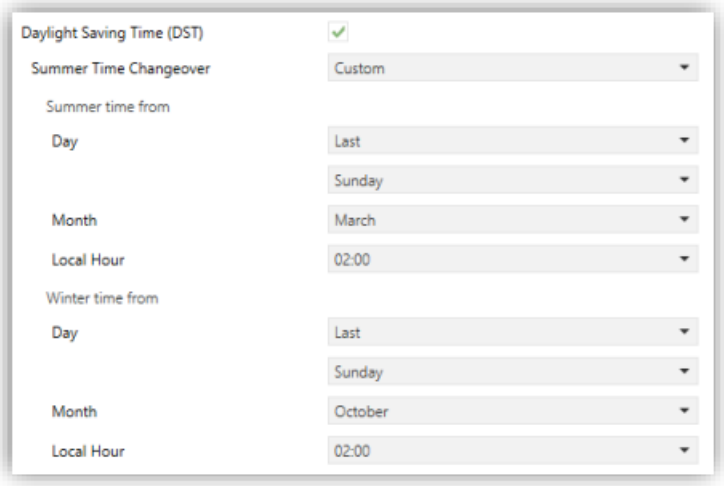

Figure 3. Custom summer time changeover

Send Time with Changeover [disabled/enabled]: enables sending of date and time objects (“[NTP] Date”, “[NTP] Time of Day”, “[NTP] Date and Time”) each time a change to summer or winter time occurs.

SENDINGS

Another tab will be available for configure the options for sending send the date and time information after certain events: after each restart of the device, once the connection to the network has been restored, after a period of time and/or when a predetermined time has been reached. It is important to point out that these objects will only be sent if a connection with the configured NTP server has been achieved, otherwise, the objects will not be sent and, if they are read, they will return the values to zero. On the other hand, if after connecting, the connection with the NTP server is lost, the device will keep sending until a restart is performed.

ETS PARAMETERISATION

After enabling Synchronize Clock Master via NTP from the “General” tab, a new tab is added to the left tree, “NTP”, along with two subtabs, “General Configuration” and “Sendings”. In the “Sendings” subtab, different types of sending can be enabled for the date and time objects “[NTP] Date”, “[NTP] Time of Day” and “[NTP] Date and Time”.

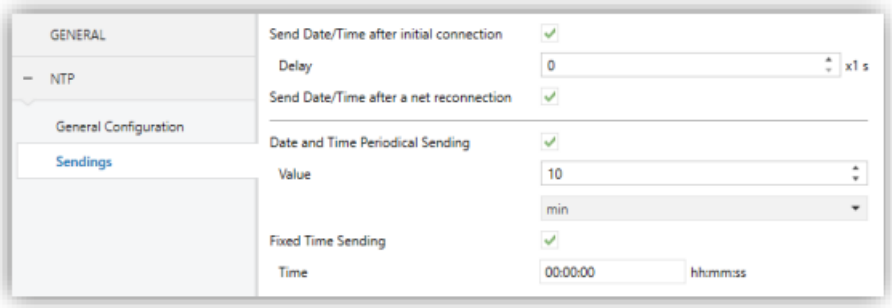

Figure 4. NTP Sendings.

Send Date/Time after initial connection [disabled/enabled]:
if enabled, date and time objects will be sent once the synchronization with NTP server is finished after a restart of the device. Additionally, a delay [0…255] [x 1s] can be set for sending the objects after the connection is ended.

Send Date/Time after a net reconnection [disabled/enabled]:
if there has been a disconnection to the NTP server, the date and time objects can be sent after reconnection.

Date and Time Periodical Sending [disabled/enabled]:
enables the date and time objects to be sent periodically, and the time between sending must be configured (Value [[0…10…255][s/min] / [0…24][h]]).

Fixed Time Sending [disabled/enabled]:
if enabled, the date and time will be sent daily at a specific time [00:00:00…23:59:59][hh:mm:ss].

In addition to the parameterized sending, the arrival of the value ‘1’ through the object “[NTP] Sending request” will trigger the sending of date and time.
Join and send us your inquiries about Zennio devices: **https://support.zennio.com**

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Documents / Resources

	Zennio NTP Clock Master Clock Module [pdf] User Manual NTP Clock, Master Clock Module, NTP Clock Master Clock Module

References

- Home En | Zennio
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