Q Series Controller NTP Function Block User's Guide

1 Pin Description

The NTPClient function block is used to enable the NTP client function of the PLC to connect to the NTP server to obtain time information and synchronize to the local time. As shown in Figure 1:

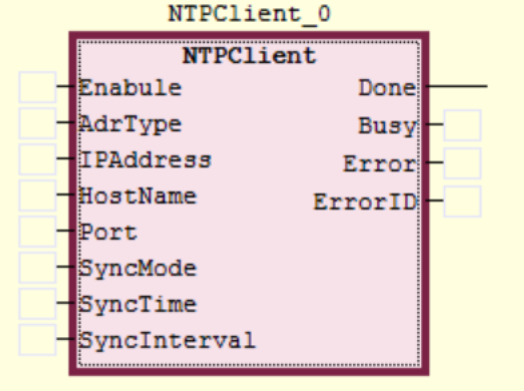


Figure 1

Enabule: enable NTP function, FALSE disable NTP client;

AdrType: connect to server method, FALSE: use IP address, TRUE: use host name;

IPAddress: IP address of NTP server;

HostName: the host name of the NTP server;

Port: port of the NTP server, default 123;

SyncMode: (synchronization mode) FLASE: synchronization by SyncInterval, True: synchronization by SyncTime.

True: synchronize at the time set by SyncTime and start synchronization at every set time;

SyncTime: set the synchronization time point in the format of 00:00:00, when SyncMode is true, synchronize the NTP server time according to this set time;

SyncInterval: synchronization interval, when SyncMode is FALSE, the range is 10S~86400S, and the synchronization will be started at the set time.

Set the time to synchronize the time of NTP server;

Done: connection to NTP server is successful;

Busy: function block execution is in progress;

Error: function block error flag;

ErrorID：ErrorID，Displays the error message as an enumeration;

2 Connection example

1. IP address connection

(1) As shown in Figure 2, configure the AdrType as FALSE, and configure the network IP of the server in IPAddress (here, we use soft PLC to simulate, and the input is the IP of the computer side).

(2) Configure the network port number in Port to match that of the NTP server (the port number of the NTP server is usually 123).

(3) After the configuration is completed, enable the Enable pin and the Done pin shows True, which means that you have successfully connected with the NTP server.

Figure 2

2. Domain name connection

(1) As shown in Figure 3, configure AdrType as TRUE and configure the domain name of the network where the server is located in HostName. (The domain name used this time is China Time Server)

(2) Configure the network port number in Port to be consistent with the NTP server (the port number of the NTP server is usually 123).

(3) After the configuration is completed, enable the Enable pin, and the Done pin shows True, which means that it has been successfully connected with the NTP server.

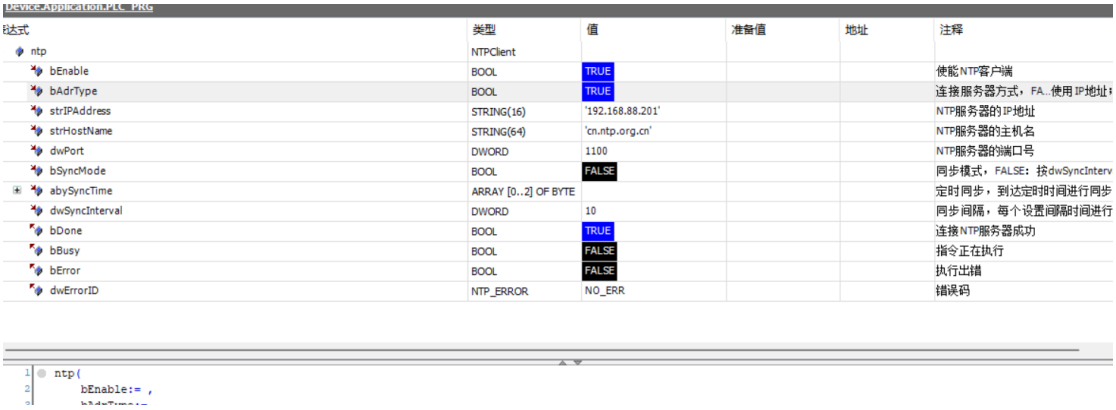


Figure 3

3 NTP function demonstration

1.Timing synchronization function

(1) As shown in Figure 4, configure SyncMode to TRUE and set SyncTime. setting as shown sets the daily synchronization time to RTC time 08:12:30. a failed synchronization will be resynchronized after 5S until the synchronization is completed.

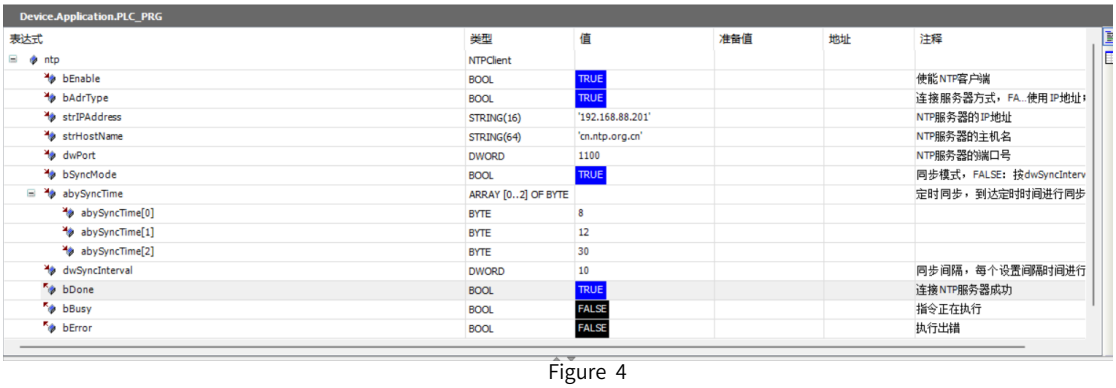
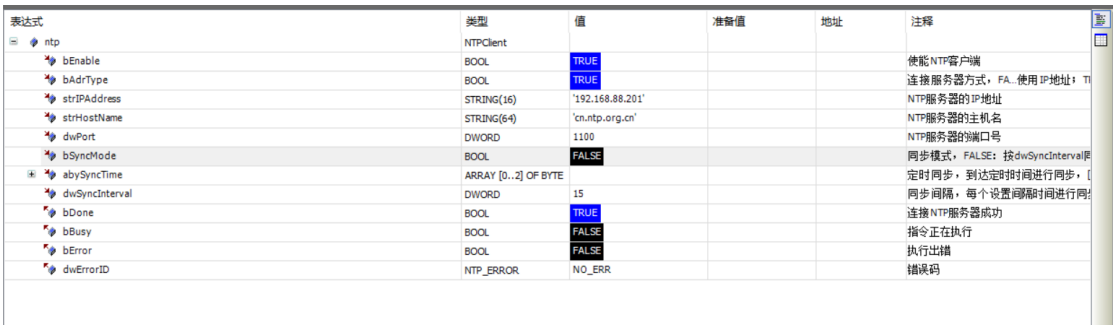


Figure 4

3. Interval synchronization function

(1)Configure SyncMode to FALSE and set the SyncIntervel time as shown in Figure 5.。

If the setting is set as shown in the figure, the interval synchronization time is set to 15s. The device will be compared with the time every 15s, and if the time difference between the device and the server is more than 1s, it will be synchronized once. (The interval time setting range is 10S-86400S.)



表达式	类型	值	准备值	地址	注释
ntp	NTPClient				
bEnable	BOOL	TRUE			使能NTP客户端
bAdrType	BOOL	TRUE			连接服务器方式，FA...使用IP地址；TI
strIPAddress	STRING(16)	'192.168.88.201'			NTP服务器的IP地址
strHostName	STRING(64)	'cn.ntp.org.cn'			NTP服务器的主机名
dwPort	DWORD	1100			NTP服务器的端口号
bSyncMode	BOOL	FALSE			同步模式，FALSE：按dwSyncInterval周
abySyncTime	ARRAY [0..2] OF BYTE				定时同步，到达定时时间进行同步，[
dwSyncInterval	DWORD	15			同步间隔，每个设置间隔时间进行同步
bDone	BOOL	TRUE			连接NTP服务器成功
bBusy	BOOL	FALSE			指令正在执行
bError	BOOL	FALSE			执行出错
dwErrorID	NTP_ERROR	NO_ERR			错误码

图表 5

4 Note

1.Version Requirement: HCQ1-1300-D:
System Version: 6.2.8

Application version: 3.40.05.15

Library version: hcfaPlcLib_v1.3.2.6

2. After modifying the configuration, the Enable pin needs to be retriggered for the configuration to take effect.