ezTCP Technical Documents

Internet Switch (EZI-10)

Version 1.1

☞ ***Caution: Specifications of this document may be changed without prior notice for improvement.***

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Contents

1 Overview

EZI-10 is a remote digital I/O Controller. This device lets us not only control remote devices' output but also monitor remote devices' input. There are two ways for the communication on TCP/IP.

The one is HTTP. This way is quite simple because you can use it just running a web browser. You don't need to make an application.

The other one is Modbus/TCP. This way allows users to set some detailed and complicated operations. To use Modbus/TCP, you should make an application or use the ModMap which is a Modbus/TCP application offered by us for free.

This document describes an example of "Internet Switch" application.

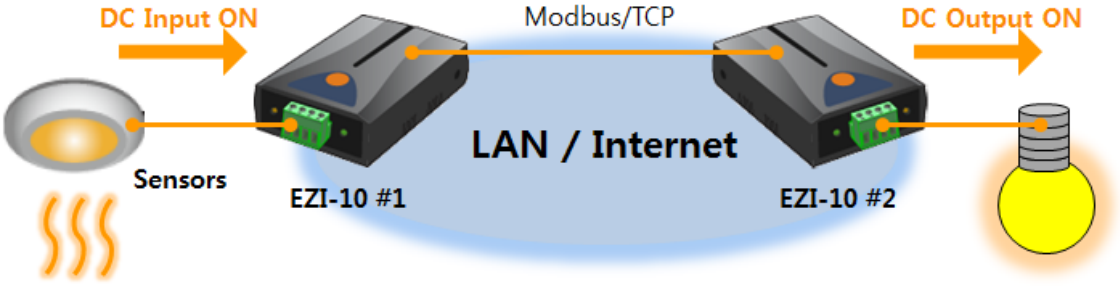

Figure 1-1 an application of Internet Switch (switch ON)

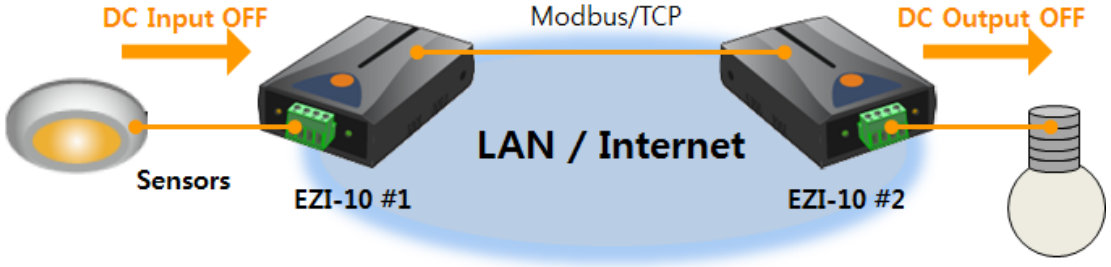

Figure 1-2 an application of Internet Switch (switch OFF)

You are allowed to control remote digital output by using two of EZI-10 as you can see in the above systems.

2 Configuration

2.1 Master

Modbus/TCP consists of a master and slaves. A master sends queries to the slaves and slaves reply the queries. You have to designate which one will be a master or which one will be a slave considering your network environment.

2.1.1 Setting Network Parameters

ezConfigIO is the tool for configuring parameters of EZI-10.

Connect EZI-10 to your network and run ezConfgIO on your PC. Referring to the below figure, set network parameters.

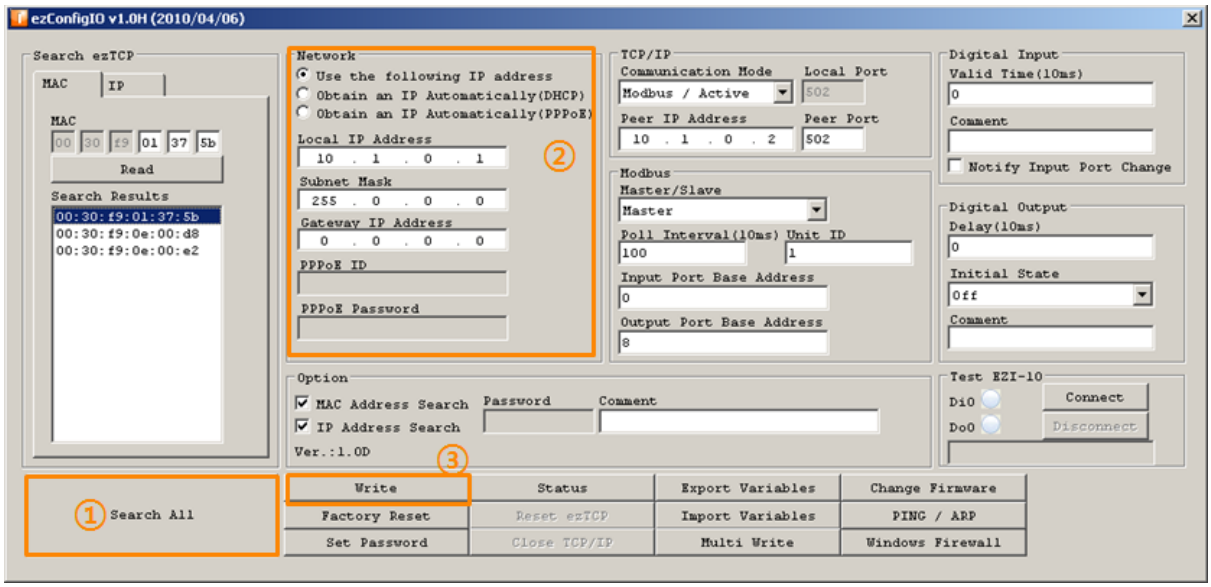

Figure 2-1 network configuration of the master

① Press the [Search All] button.

② Set network parameters.

Table 2-1 network parameters

Parameter	Description	Value
IP Assignment	Automatically or Manually	Manually
IP Address	IP Address for the master	10.1.0.1

③ Click the [Write] button.

2.1.2 Setting TCP/IP Parameters

To communicate on Modbus/TCP, a master and a slave should be connected on TCP. The one which tries to make connection sending [SYN] segments is called TCP client and the one which waiting connection request segments from clients is called TCP server. Usually, a master is set to a TCP client. (Modbus / Active)

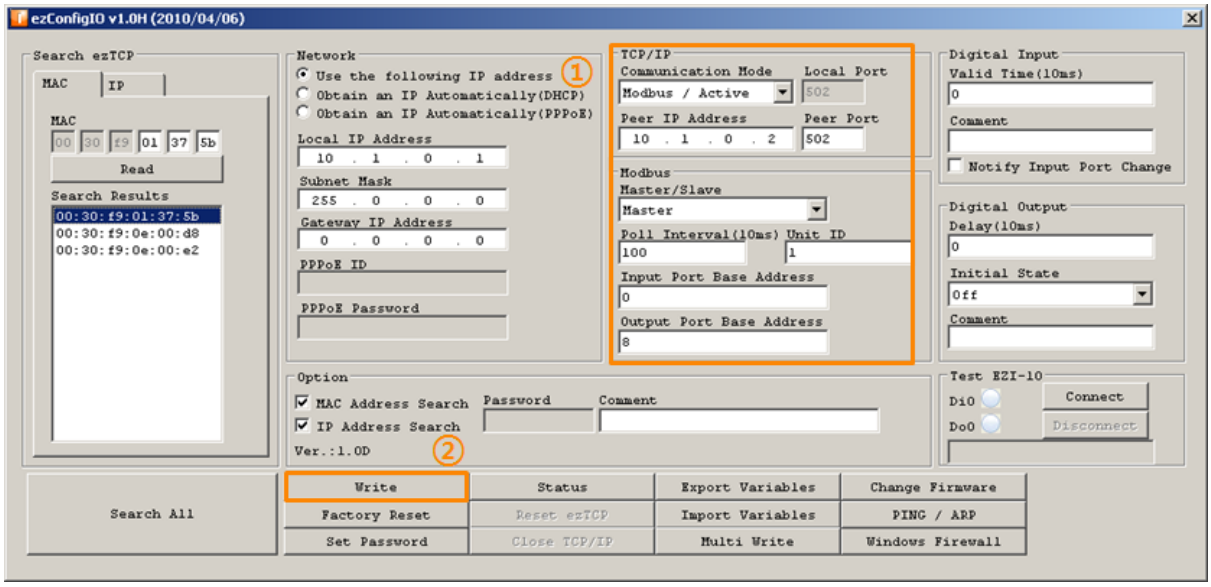

Figure 2-2 TCP/IP configuration of the master

① Set the TCP/IP parameters. (Set parameters referring to the below table)

Table 2-2 TCP/IP parameters

Parameter	Description	Value
Comm. Mode	TCP Active or Passive connection	Modbus / Active
Peer IP Address	Slave's IP Address	10.1.0.2
Peer Port	Port number for communication	502
Master / Slave	Mode selection	Master
Poll Interval	Interval for sending queries	100 (1sec)
Unit ID	ID of a pairs of a master and a slave	1
Input Port Base Addr.	Input Port Base Address	0
Output Port Base Addr.	Output Port Base Address	8

② Click the [Write] button.

☞ ***It is okay to set the master to TCP server (Modbus / Passive) if you need it.***

2.2 Slave

2.2.1 Setting Network Parameters

The way of setting network parameters of slaves is the same with the master's.

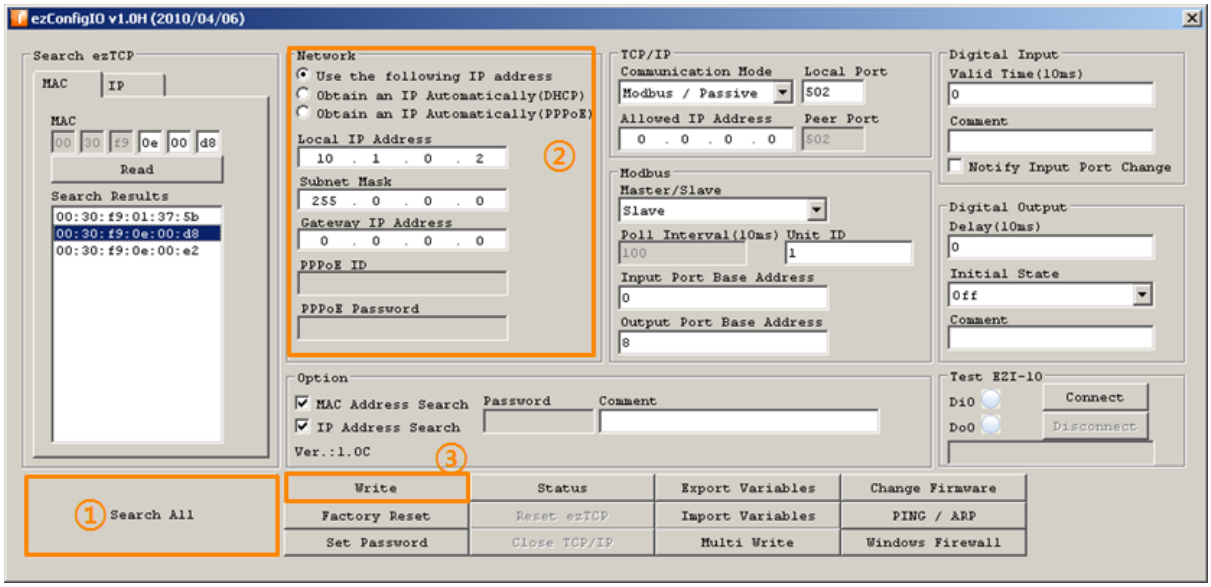

Figure 2-3 network configuration of the slave

① Press the [Search All] button.

② Set network parameters.

Table 2-3 network parameters

Parameter	Description	Value
IP Assignment	Automatically or Manually	Manually
IP Address	IP Address for the slave	10.1.0.2

③ Click the [Write] button.

☞ ***Note that the each IP address of the master and slave shouldn't be the same.***

2.2.1 Setting TCP/IP Parameters

Usually, a slave is set to a TCP server. (Modbus / Passive)

☞ ***In case that the master is set to a TCP server, the slave should be a TCP client.***

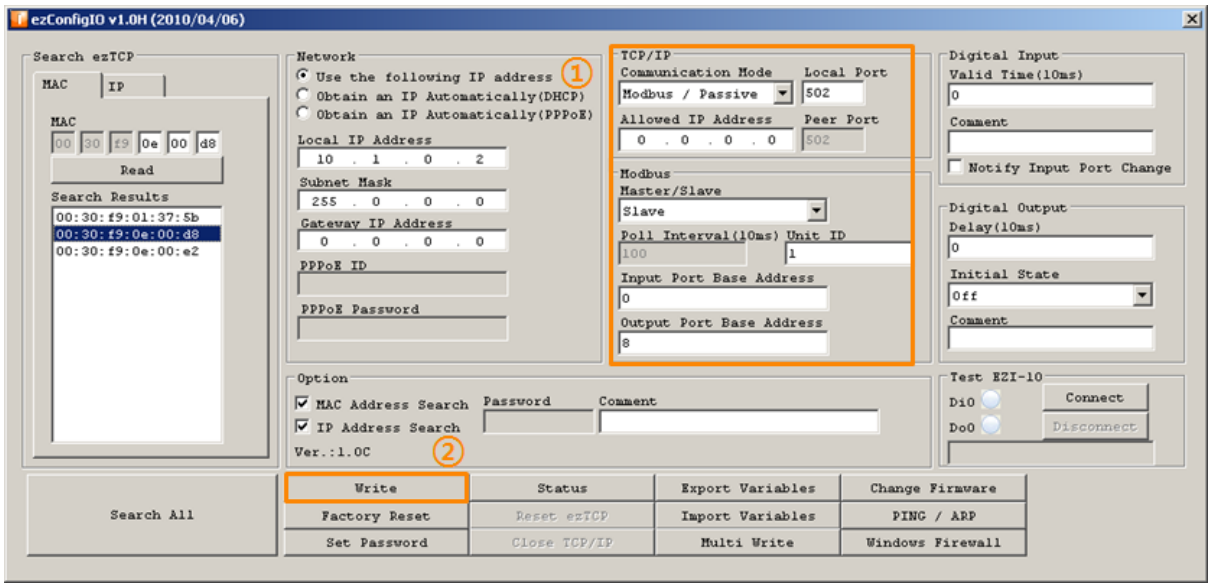

Figure 2-4 TCP/IP configuration of the slave

① Set the TCP/IP parameters. (Set parameters referring to the below table)

Table 2-4 TCP/IP parameters of the slave

Parameter	Description	Value
Comm. Mode	TCP Active or Passive connection	Modbus / Passive
Local Port	Port number for communication	502
Allowed IP Address	Allowed IP address for TCP connection	0.0.0.0
Master / Slave	Mode selection	Slave
Unit ID	ID of a pairs of a master and a slave	1
Input Port Base Addr.	Input Port Base Address	0
Output Port Base Addr.	Output Port Base Address	8

② Click the [Write] button.

3 Operation

3.1 Basic Operation

There are two basic operations in this application.

- Automatic Control of the Master's OUTPUT by the Slave's INPUT

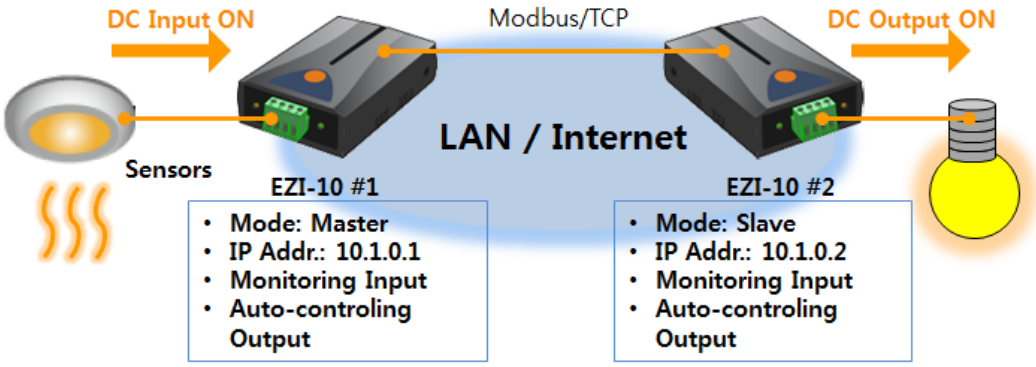

Figure 3-1 basic operation 1

- Automatic Control of the Slave's "OUTPUT by the Master's INPUT

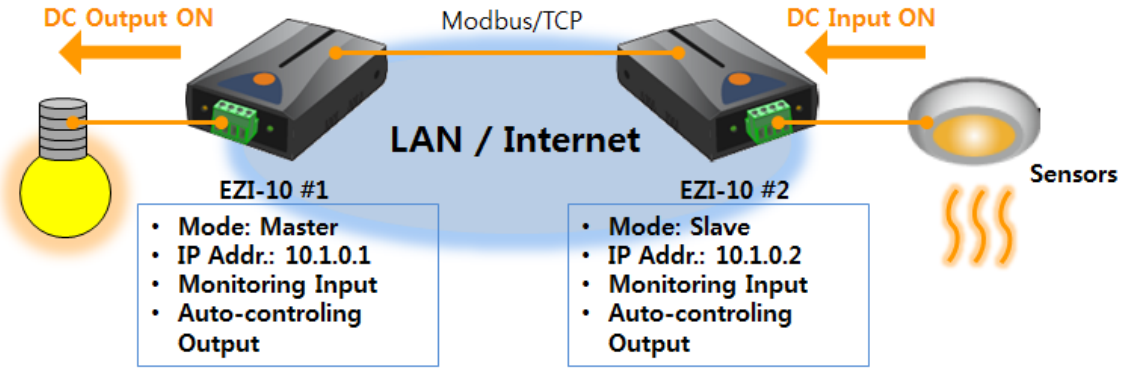

Figure 3-2 basic operation 2

3.2 Advanced Operation

You can use this application in detail by using the below parameters.

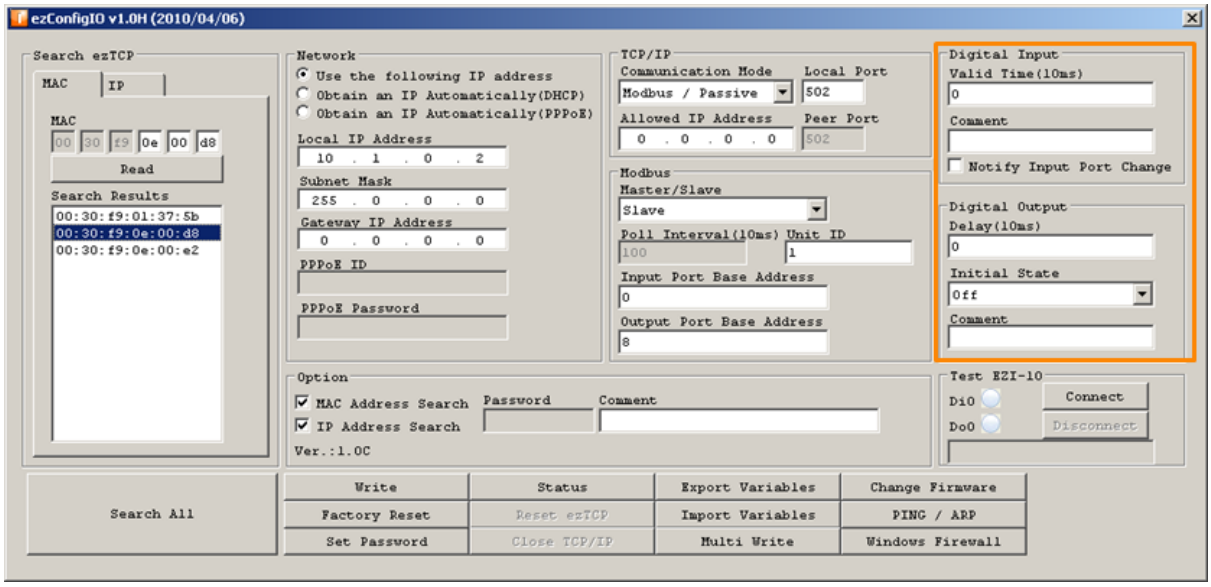

Figure 3-3 advanced operation

- Valid Time

  EZI-10 recognizes that the input signal is valid only if the signal keeps HIGH for the value of [Valid Time]. That means all shorter signals than the value of [Valid Time] are ignored. The unit is 10ms.

- Notify Input Port Change

  This option lets EZI-10 send response segments to the counterpart immediately when its input port state has been changed without queries.

- Delay

  EZI-10 delays output as much as time set to the value of [Delay]. The output signal should be maintained by the point of operation time and any other outputs can be acceptable when timer is running by this option. The unit is 10ms.

4 Revision History

Date	Version	Description	Author
2011.04.07	1.0	○ This document has been initially released.	Roy LEE
2013.02.07	1.1	○ Update some figures(specifying Power type)	Roy LEE