Connecting UniOP to Hitachi ETH

This Technical Note contains the information needed to connect UniOP to Hitachi controllers using the Ethernet network. The “Hitachi ETH” protocol is associated to the Designer file UPLC157.DLL.

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1. Introduction

The UniOP operator panels can be connected to the Hitachi H-series controllers via Ethernet. The Hitachi controller must be equipped with the LAN-ETH Intelligent Ethernet Interface Module; UniOP must be equipped with the TCM10 Ethernet Interface module and the ETAD01 adapter.
In the Designer 'Change Controller Driver…' dialog box, the communication driver 'Hitachi ETH' must be selected for communication via Ethernet.

2. Designer Configuration

2.1 Designer Controller Setup

Figure 1 shows the Designer Controller Setup dialog box for the Hitachi ETH driver.
The Ethernet IP address of the controller connected to the operator panel must be defined in the "IP address" field.

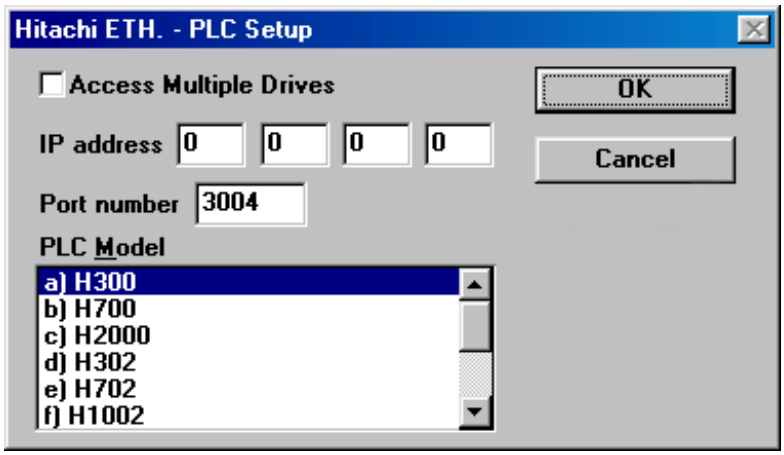

Figure 1– Controller Setup dialog box

The "Port Number" parameter allows to change the port number. The LAN-ETH Ethernet card setup allows for entering a user defined value for the port number.
Default value for this parameter is set to 3004 and it corresponds to the default setting of Hitachi Controllers.

The protocol allows the connection of multiple controllers to one operator panel, as shown in Figure 2. To set-up multiple connections, check "Access Multiple Drives" checkbox, shown in Figure 1.

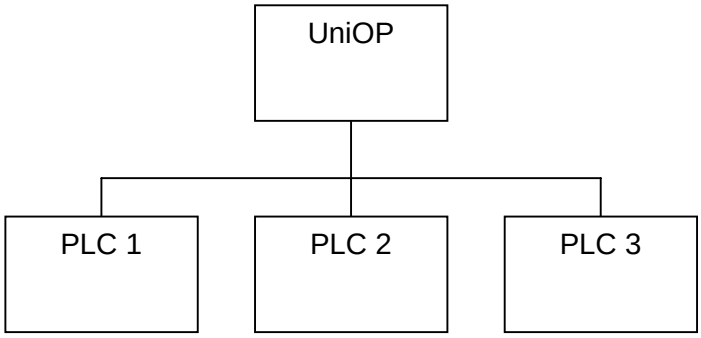

Figure 2– Multiple controller connection

2.2 Designer Panel Setup

The UniOP panel has a unique IP address assigned to it. The IP address for UniOP has to be entered in the Panel Setup dialog box under the tab “External Devices”. Enter the IP address in the field “Ethernet Board” as shown in Figure 3 below.

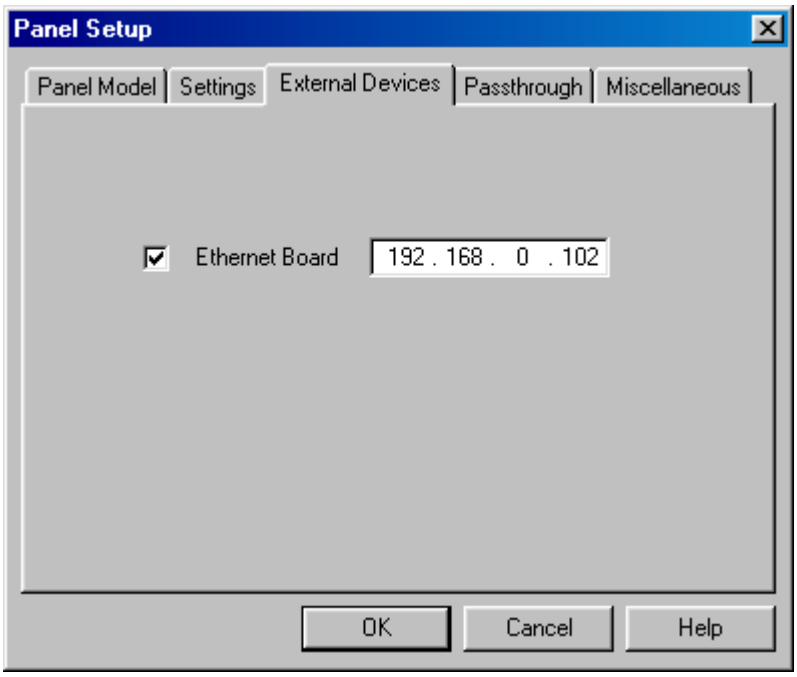

Figure 3

3. PLC Configuration

The default communication options of the Hitachi ETH driver are the following:

- Protocol UDP/IP
- Port number 3004

The PLC has to be properly configured to support UPD/IP connections through the port number 3004. Please refer to Designer configuration for different port numbers.
Communication using TCP/IP is not supported.

4. Compatibility

Projects created using "Hitachi ETH" driver (for communication with Hitachi H-series controllers via Ethernet) and those generated using "Hitachi H series" driver (for communication with Hitachi H-series controllers via serial port) are fully compatible. In other words, there is exactly the same view and access to all the variables of the controller with both communication drivers. Project files can be converted from serial protocol to Ethernet protocol and vice versa.

Appendix A. Communication Error Codes

Current communication status is displayed in the System Menu of the UniOP.
A message and a numeric error code describe the error status.
The message reports the current communication status. The number shows the code of the current communication error or, if the communication is correct, the code of the last error encountered. When the error code 0 is shown, it means there have been no communication errors since this system start-up.

Code	Description	Notes
0	**No error**	There are no communication errors and there have been no errors since start-up.
4	**Negative acknowledgment**	The controller rejected the request.
5	**Time out**	No response received from the controller within the timeout period.
7	**General communication error**	Software error. Contact the manufacturer
9	**ARP error**	ARP not resolved.