

Connecting UniOP to Jetter Controllers with Ethernet

This Technical Note contains the information needed to connect UniOP to Jetter controllers using an Ethernet connection.

The Jetter Ethernet communication driver is delivered with the Designer file D32uplc208.dll.

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1 Introduction

To create a Designer project for Ethernet communication to the Jetter controllers, select the driver “Jetter ETH” from the list of drivers in the Configure Controller... dialog box.

The operator panel must be equipped with the optional TCM10 or SCM11 communication modules to support Ethernet UDP/IP communication.

UniOP currently supports only 10 Mb Ethernet over twisted pair.

2 Configuration with Designer

The UniOP project file must be properly configured for Ethernet communication with Jetter Controllers.

2.1 Panel Setup

The UniOP panel must be assigned a unique IP address.

There are multiple ways to assign an IP address to the panel; please refer to the User's Manual for detailed instructions.

The "Ethernet Board" option must be enabled in the Panel Setup dialog box under the tab "External Devices".

The panel IP address may be defined in the field "Ethernet Board" as shown in Figure 3 below.

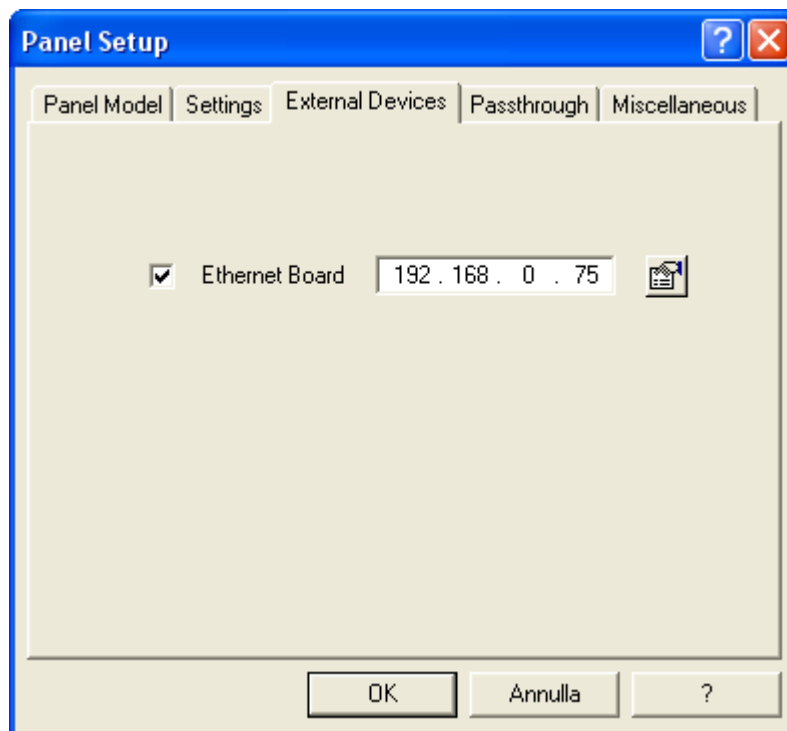


Figure 1 – IP Address in Panel Setup

If the field contains the IP address 0.0.0.0, then the panel will derive the IP address using one of the alternate methods.

2.2 Controller Setup

Figure 2 shows the Designer Controller Setup dialog box for the Jetter ETH driver.

The Ethernet IP address of the controller connected to the operator panel must be entered in the "IP address" field.

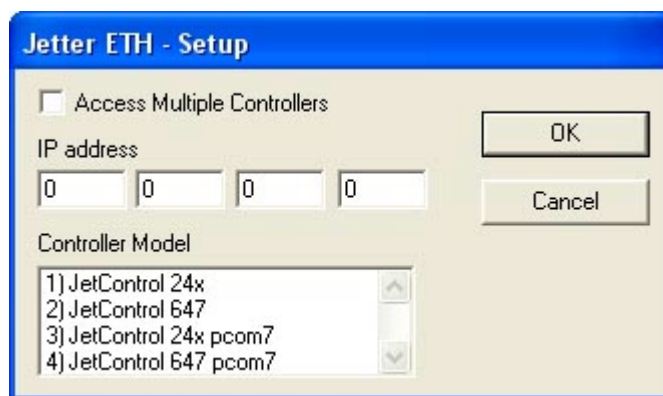


Figure 2– Controller Setup dialog box

The protocol implementation supports the connection of multiple controllers to one operator panel, as shown in Figure 3. To set-up multiple connections, check the “Access Multiple Controllers” checkbox in the Controller Setup dialog box, see Figure 2.

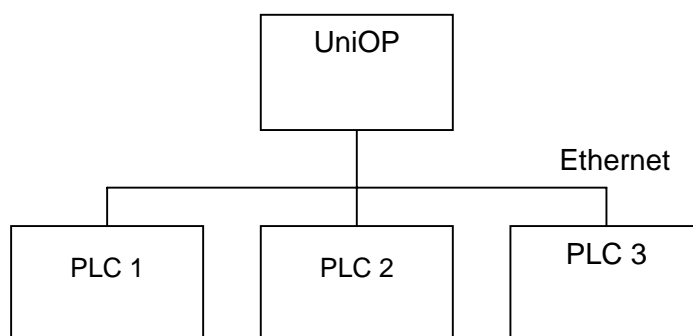


Figure 3– Multiple controller connection

Depending on the PLC configuration, there is also the possibility to connect more than one panel to the same controller.

2.3 RDA Setup

The RDA support depends on the model of the controller selected in the “Controller Setup”. In case the PLC model supports the pcom7 command set, its internal memory organization is based on 32 bits registers; the RDA can be then configured over double word registers, where all the 32 bits are used or, for compatibility with old projects, only over the first 16 bits of each double word register. To use the compatibility mode select “Register as word” in the available data types for RDA configuration.

Models using pcom5 command set can use RDA only over “Registers as word” data types memory. The “Register as word” data type uses only the first 16 bits of the Jetter native 24 bits registers.

The Real Time Clock information in the Reserved Data Area (RDA) is coded in binary and is arranged as shown in Table 1 for the 32 bits registers.

	Byte 3	Byte 2	Byte 1	Byte 0
REGn	Day	Month	Reserved	Day of the week
REGn+1	Minute	Second	Year	Hour

Table 1. RTC information in the RDA

The page number displayed and the page number requested in the RDA are coded in binary. The RDA can be freely positioned within the Data Registers in the PLC memory.

For the parts of the RDA organized in bits (Keyboard Status, LED Control, Alarms, UniOP Status Word and PLC Command Word), the first bit in the RDA corresponds to the first bit in the PLC (i.e. the LSB bit in the register). For example, if the Keyboard Status area is positioned at address D0, then the key F1 will be mapped to bit 0, the key F8 will be mapped to bit 7 and so on as listed in Table 2.

	30								23								16								15								7								0							
REGn	F32								F25	F24									F17	F16										F9	F8									F1								

Table 2. RDA bit information

Similarly, if the UniOP Status Word is positioned at the address REG12, then the status bit S0 will be mapped to REG12.0, the bit S7 will be mapped to REG12.7 while the bit S8 will be mapped to REG12.8.

2.4 Alarms

In a similar way as RDA, the Alarms can be configured using the “Register as word” or “Register” data type depending on the controller model selected.

Models using pcom5 commands set will need to work over “Register as Word”, while models using pcom7 or greater can use the 32 bit registers.

The “Register as word” data type uses only the first 16 bits of the Jetter native 24 bits registers.

3 PLC Configuration

The Jetter system must be properly configured for Ethernet communication using PLC programming software to assign proper IP and mask to its Ethernet interface.

Appendix A. Communication Error Codes

Current communication status is displayed on the system page of the UniOP. Beside the string, describing current state of the communication (OFF, ON, ERR), there is an additional error code representing the last (which may be not the current one) error encountered. The codes are:

Code	Description	Notes
00	No error	There are no communication errors and there have been no errors since start-up.
04	Response error	Unexpected response frame length
05	Time-out (receiving)	The panel has not received a response from the PLC within the timeout interval
07	Generic error	Internal protocol error, please contact the technical support
08	Status error	The controller returned the "Status error" message: timeout with the slave device
09	Communication error	Failed to connect to PLC or failed to send request
10	Invalid parameter in request	The controller returned the "status error" to inform that a wrong parameter has been used in the panel request
12	Invalid command in request	The controller returned the "status error" to inform that a wrong command has been used in the panel request
13	General error	The controller returned the "status error" as a generic error
14	Error in receiving the request	The controller returned the "status error" to inform that there was an error while receiving the request frame from the panel
15	Wrong protocol	The controller supports a different protocol commands set than specified in Designer project controller setup (pcom5/pcom7)