EXOR INTERNATIONAL

Tech-note

Mitsubishi FX Ethernet Driver for JMobile

This document contains the information needed to connect the panels to Mitsubishi FX Series controllers using an Ethernet connection to the FX3U-ENET module.

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Contents

Mitsubishi FX Ethernet Driver

The Mitsubishi FX3U controller must be equipped with an appropriate Ethernet interface. The following Ethernet communication modules can be used for communication:
FX3U-ENET

The Communication driver implements the MELSEC-F (or MC) communication protocol described in the Mitsubishi document “FX3U-ENET USER’S MANUAL”, chapter 8 “Communication using MC protocol”.

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Settings

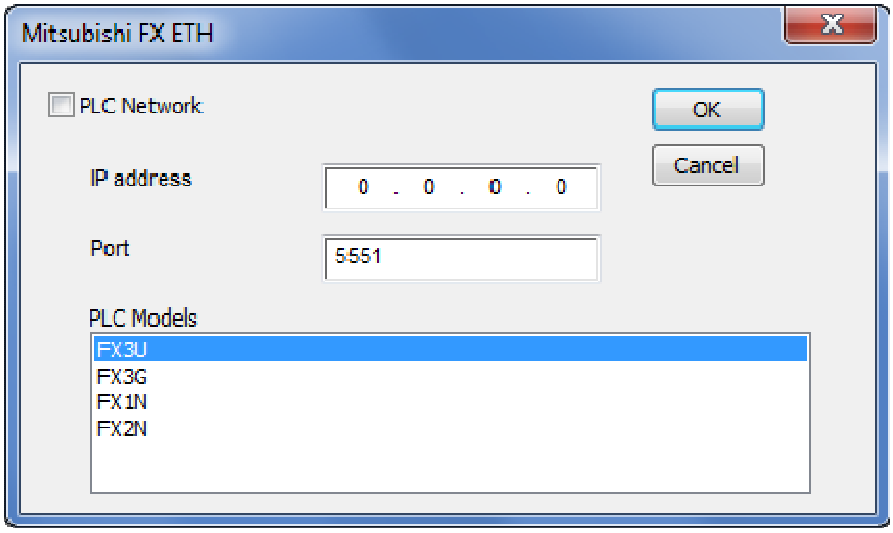

Figure 1

IP address Ethernet IP address of the controller

Port Specifies the port number (decimal) used in the communication with the PLC.

PLC Model Defines the PLC model connected

PLC Network The protocol allows the connection of multiple controllers to one operator panel. To set-up multiple connections, check “PLC network” checkbox and enter IP Address for all controllers.

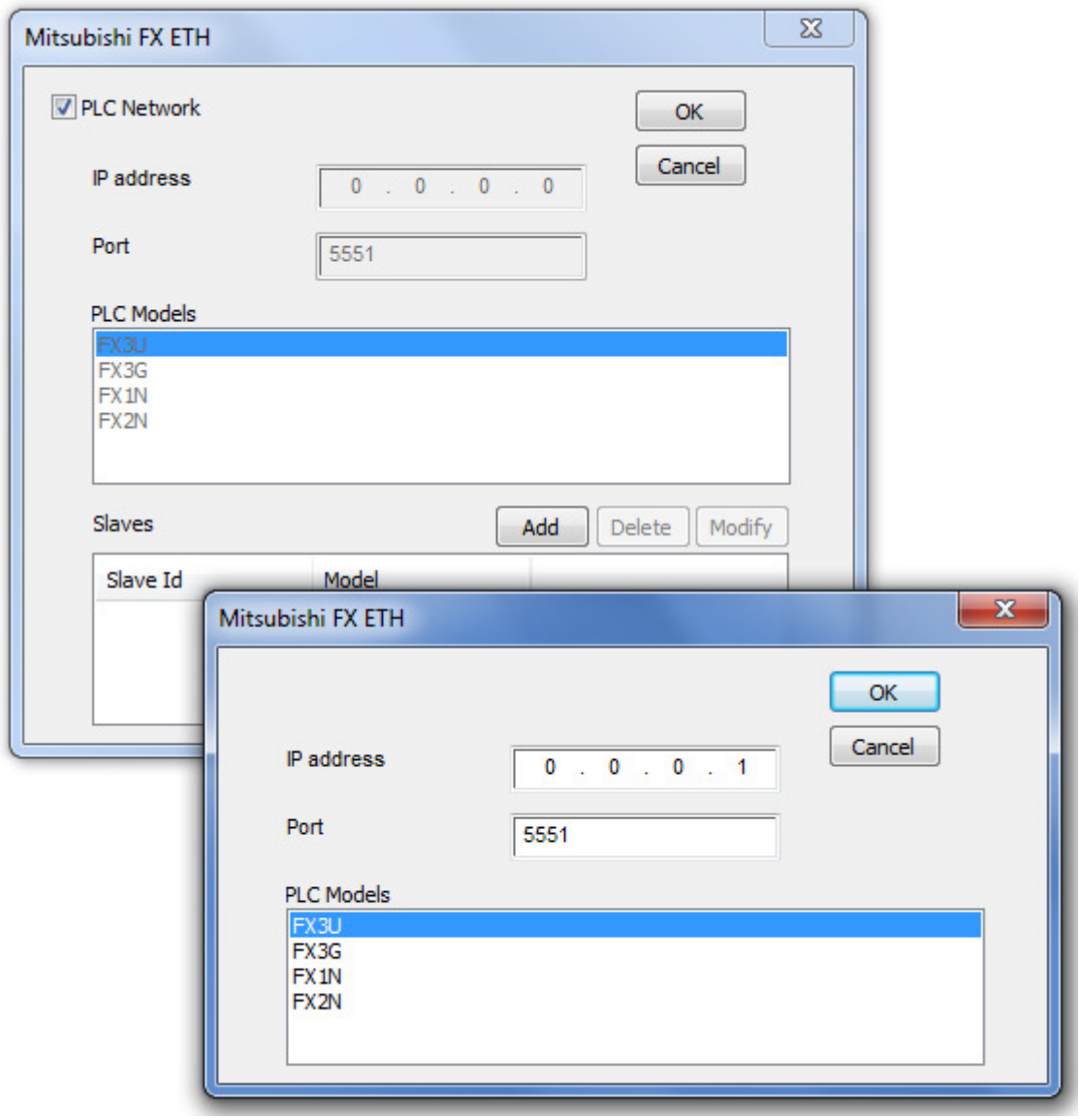

Figure 2

Recommendations for Controller Settings

The Mitsubishi FX3U system must be properly configured for Ethernet communication using the Mitsubishi FX Configurator 1.00 (SW1D5C-FXENET-EL) or higher.

The figure below shows an example of network configuration for Ethernet communication. In the controller Configurator settings are required for “Operation settings” and “Open settings” areas.

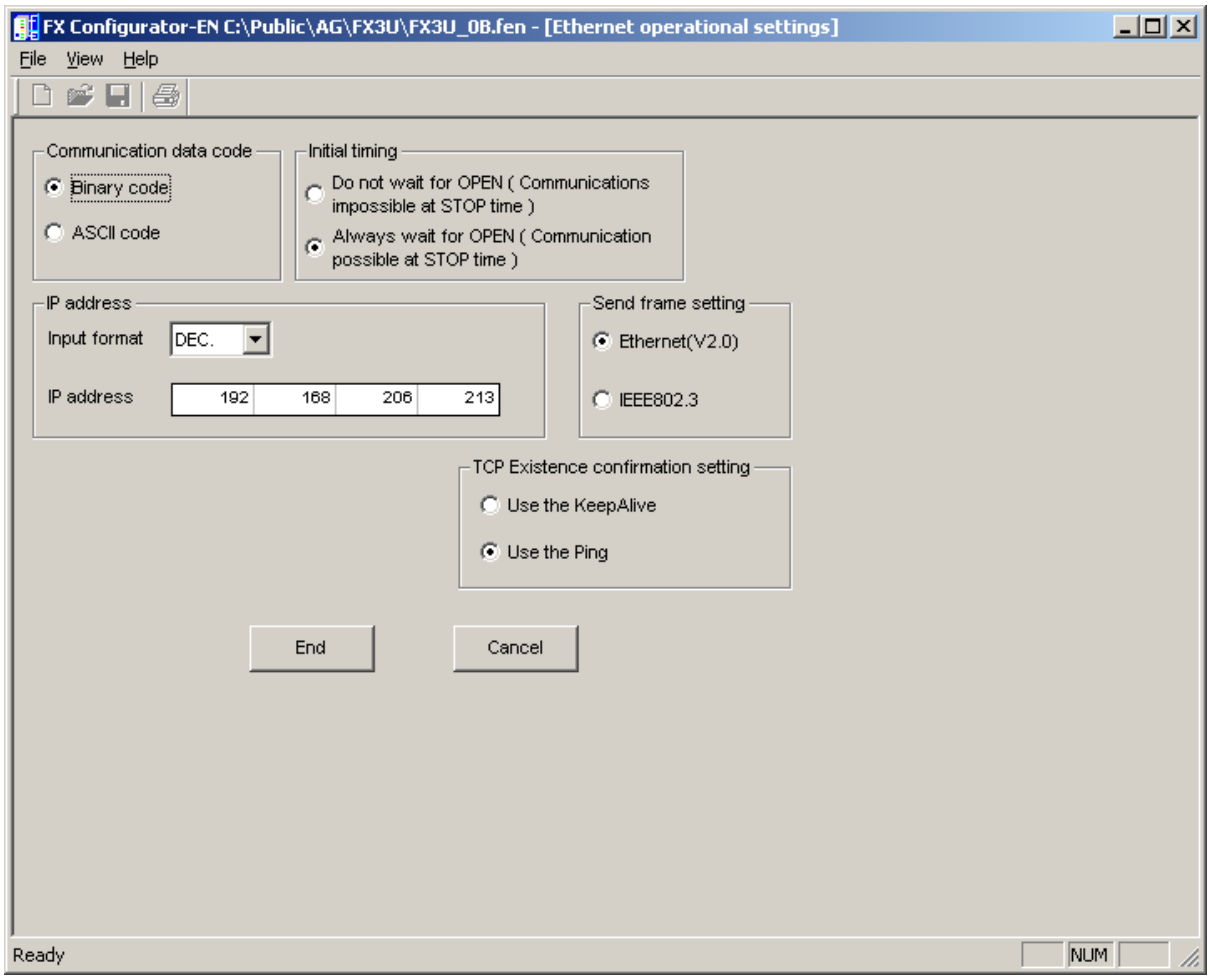

Figure 3

Please note that the panel communication protocol supports only Binary code communication.

The figure below shows the Ethernet “Open settings” configuration.
The detailed explanation of the meaning of each setting is available in Chapter 5.5 of the Mitsubishi “FX3U-ENET USER’S MANUAL”.

Please note that the use of more than one panel communicating with the same controller requires to define proper settings in the “Open settings” configuration dialog: one connection per each panel must be configured with proper properties.

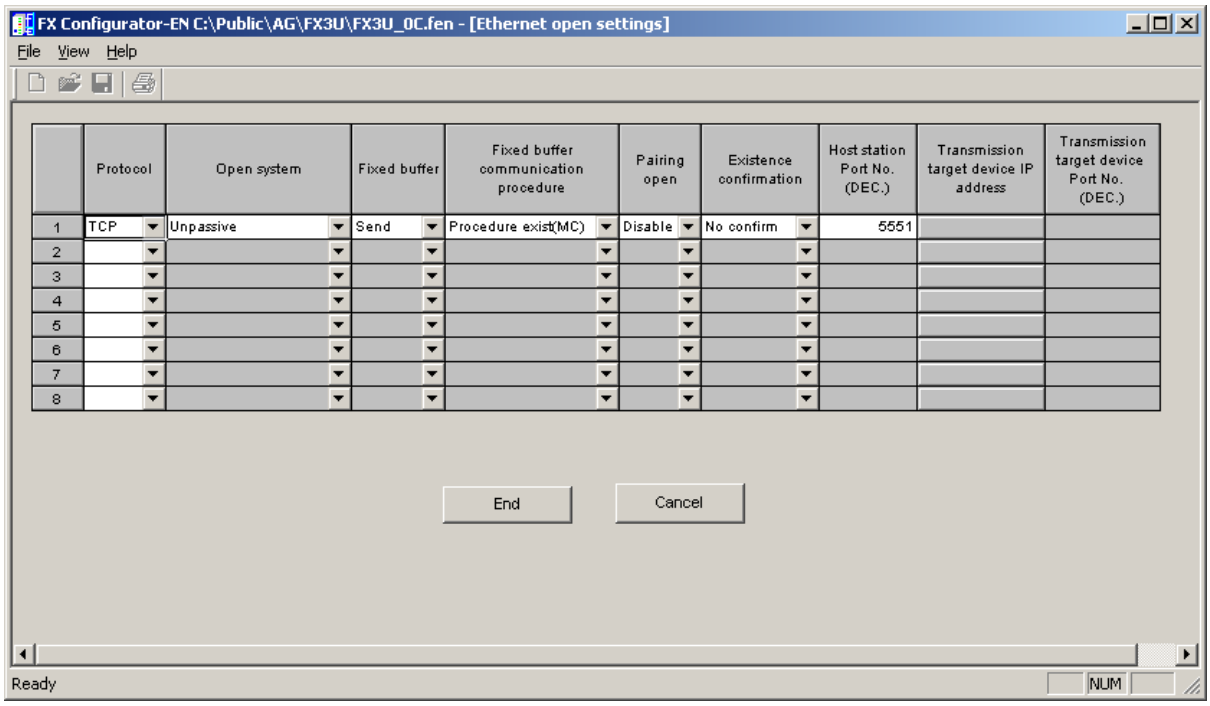

Figure 4

Last aspect of PLC configuration is concerning Timeout settings.
For proper communication between panel and controller it is required to change the default "Destination existence confirmation starting interval" from the default value of 1200 to 10ms. Please see figure below).
With default settings, in case of communication error, the controller keeps alive the connection for a too long time before to allow a new connection from the HMI.

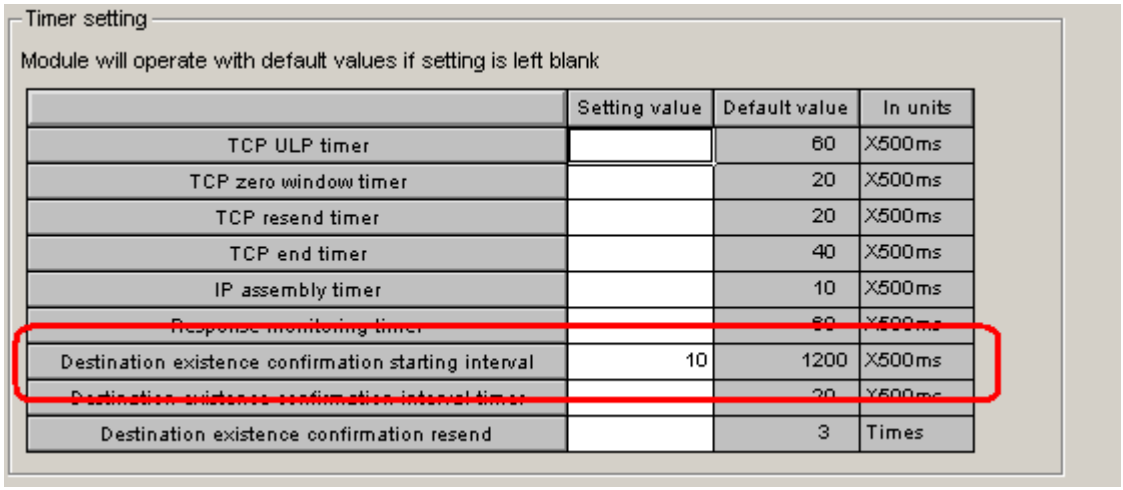

Figure 5

Communication Status

The current communication status can be displayed using the dedicated system variables. Please refer to the User Manual for further information about available system variables and their use.

The codes supported for this communication driver are:

Error	Notes
NAK	Returned in case the controller replies with a not acknowledge
Timeout	Returned when a request is not replied within the specified timeout period; ensure the controller is connected and properly configured to get network access
Invalid response	The panel did receive from the controller a response, but its format or its contents is not as expected; ensure the data programmed in the project are consistent with the controller resources
General Error	Error cannot be identified; should never be reported; contact technical support