Tech-note

Connecting UniOP to Festo Controllers (Serial)

How to connect UniOP to Festo controllers using the FST CI communication protocol over an asynchronous serial link.

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Tn248
Ver. 1.00

Contents

1 Introduction

To create a UniOP application for connection to a Festo controller via a serial link, select the driver "Festo" from the list of available communication drivers in the Change Controller Driver… dialog box.
Communication is based on the Festo FST CI protocol.
The Festo communication driver is delivered with the Designer file D32uplc023.dll.

Note: *In case the Festo driver is not shown in the list, make sure that the file D32uplc023.dll is present in the Designer installation folder and then press the Refresh button in the Change Controller Driver… dialog box.*

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2 Setting-up UniOP for Communication

Setting-up UniOP for serial communication with Festo controllers is straightforward. Information is available in this chapter.

2.1 Controller Setup

Use the Controller Setup dialog box to choose the Festo controller type you want to connect and the communication parameters.

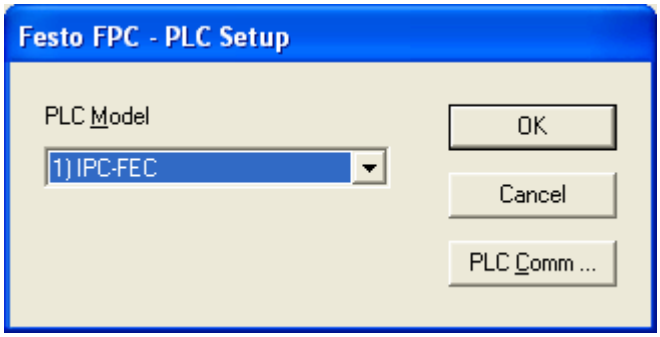


Figure 1 - Controller Setup Dialog Box

Choose IPC-FEC for connection to current FEC controllers.
The following families are supported:
FEC-FC20-FST
FEC-FC30-FST
FEC-FC400-FST
FEC-FC600-FST
Use cable CA223 to connect to FEC controllers.

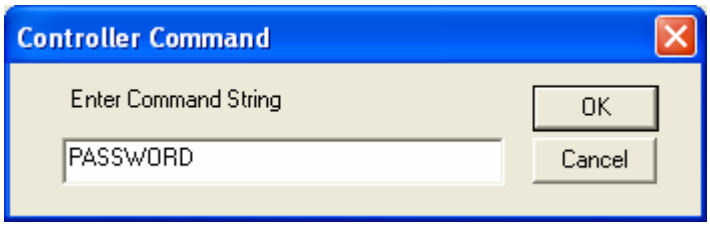
The list includes also several legacy Festo controllers.

Click on PLC Comm… to view/change the communication parameters. The default values are suitable for most applications.

2.2 Special Commands

UniOP can issue special commands to the controller using the Send Command macro option. You can find the Send Command macro button in the Macro Editor.
The following commands are available:

Run Program	Starts execution of the PLC program.
Stop Program	Stops execution of the PLC program when the PLC is stopped.
PSWD Lock	Enables the password protection of the communication port. If the PLC has been properly configured, the communication is locked and it is no longer possible to write data from the HMI to the PLC. Reading data is still possible.
PSWD Unlock	Disables the password protection of the communication port. If the PLC has been properly configured, the communication is unlocked and the HMI can write data to the PLC. When programming the unlock macro you are requested to enter the password string that has been programmed in the PLC.



Note: *Controlling the program execution from the HMI is a critical operation and must be performed only by trained personnel under controlled conditions. Special care must be taken in the design of the user interface to avoid unwanted use of these commands.*

The selection of the command is shown in the figure below.

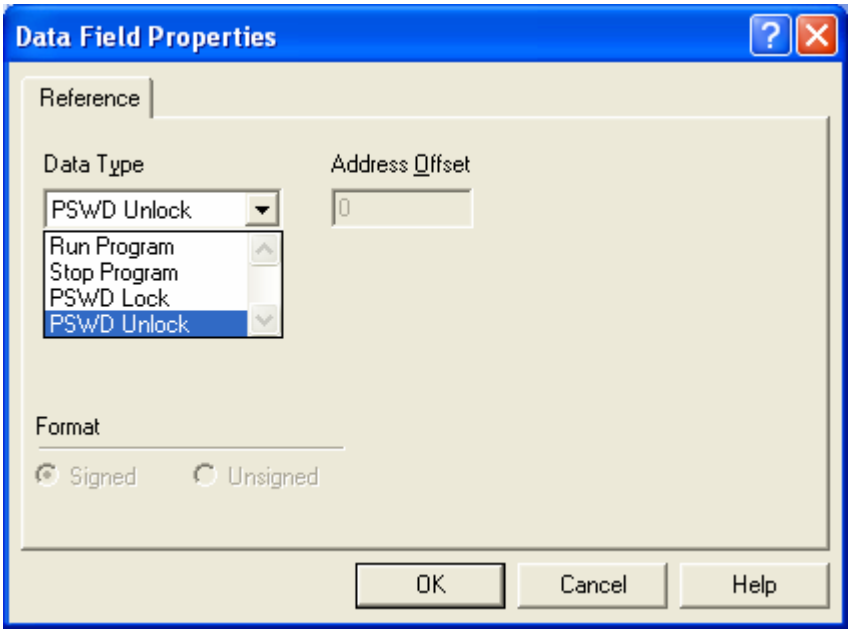


Figure 2 – Command Selection Dialog Box

3 FST Data Types

Depending on the device selection in Controller Setup, different data types may be available for use with Designer.
The Data Field dialog box shows the data types that can be used in the HMI.

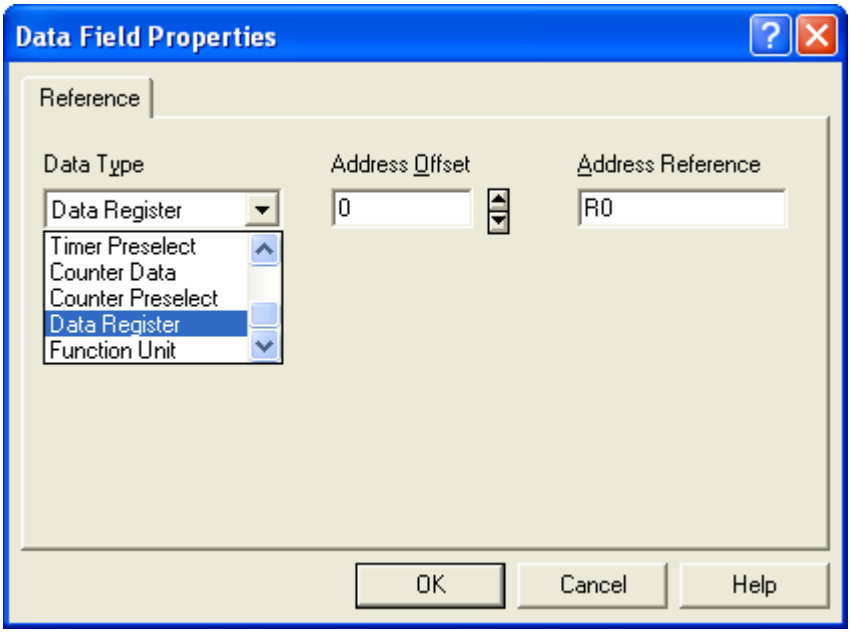


Figure 3 – Data Field Properties Dialog Box

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
00	No error	There are no communication errors and there have been no errors since start-up.
04	Negative acknowledge	The controller returned a NAK response
05	Time out	No response received from the controller within the timeout period
06	Response error	Received frame is not correct
07	General communication error	Software error. Contact manufacturer.