

CoDeSys V2.3 Ethernet Driver for JMobile

This documents describes how to use the
CoDeSys Ethernet driver for JMobile platform

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CoDeSys V2.3 Ethernet Driver

The CoDeSys communication driver for Ethernet supports communication switch controllers based on the V2.3 CoDeSys version.

Please note that changes in the controller protocol or hardware, which may interfere with the functionality of this driver, may have occurred since this documentation was created. Therefore, always test and verify the functionality of the application. To accommodate developments in the controller protocol and hardware, drivers are continuously updated. Accordingly, always ensure that the latest driver is used in the application.

Settings

The chapter describes settings for the driver to be applied in Studio and on the PLC programming software in case anything is required to ensure proper connection between HMI and target device(s).

Protocol Editor Settings

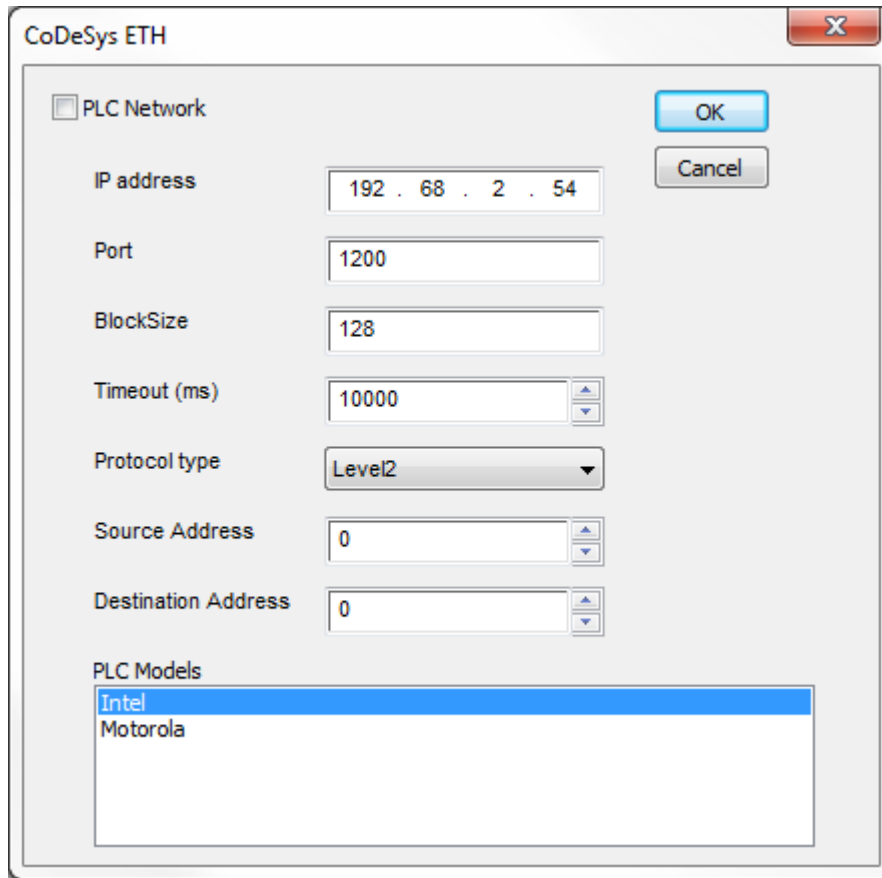


Figure 1

- IP address** Ethernet IP address of the controller
- Port** This parameter allows changing the port number used for the communication. Default value for this parameter is set to 1200 and it corresponds to the default setting of CoDeSys-based controllers.
- PLC Model** Defines the byte order that will be used by the communication driver when sending communication frames to the PLC
- Block Size** Enter the max block size supported by your controller (limit is 1024 KB)
- Protocol type** Shows a list with the available protocol variants. Please make sure you check what protocol variant is supported by the CoDeSys run-time you want to connect.
- Timeout** The number of milliseconds between retries when communication fails.
- Source Address & Destination Address** Source and Destination Address are available only when TCP/IP Level 2 Route is selected in Controller Setup. The Destination is the node of the PLC and allows the protocol to reads variable in a sub-network. The address is used to read variables when multiple PLCs are connected in a sub-network (serial network) but only one of it have the Ethernet interface. See chapter for
- PLC Network** The protocol allows the connection of multiple controllers to one operator panel. To set-up multiple connections, check "Access Multiple PLC's" checkbox and enter IP Address for all controllers.

In case the panel device needs to be configured to access to a network of controllers, check the "PLC Network" check box and configure the network adding the several controllers as showed in the following figure.

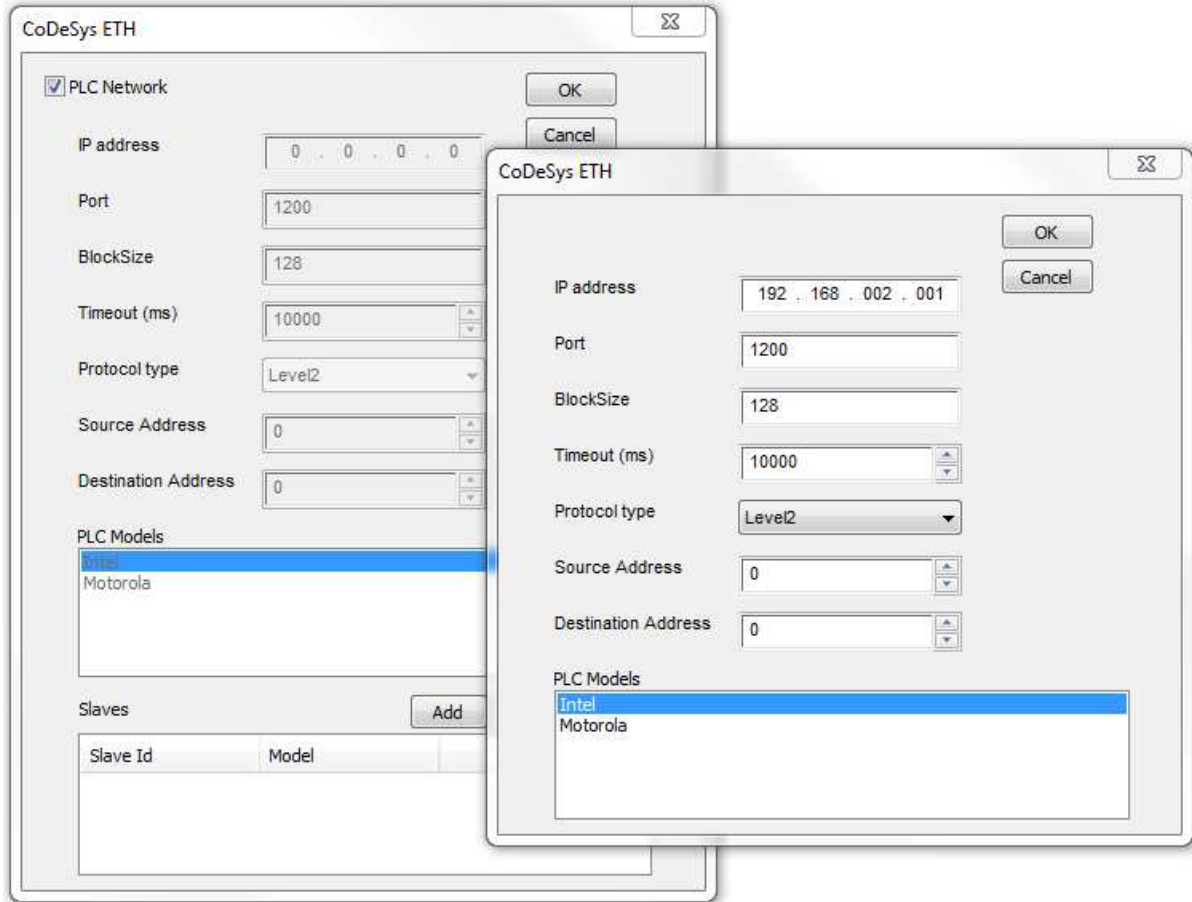


Figure 2

Note: The CoDeSys Ethernet driver supports the connections to multiple controllers starting from version V1.60

Note: The CoDeSys ETH driver is the best choice also when creating projects for the internal controller iPLC CoDeSys. To use the CoDeSys ETH driver for communication with iPLC it is enough to configure the IP address of the PLC as localhost (127.0.0.1). The iPLC CoDeSys supports communication with CoDeSys ETH driver with symbol based support (see next chapter) starting from V1.55 and above.

CoDeSys Software Settings

When creating the project in CoDeSys, the option Download Symbol File (under Target Settings/General) must be checked.

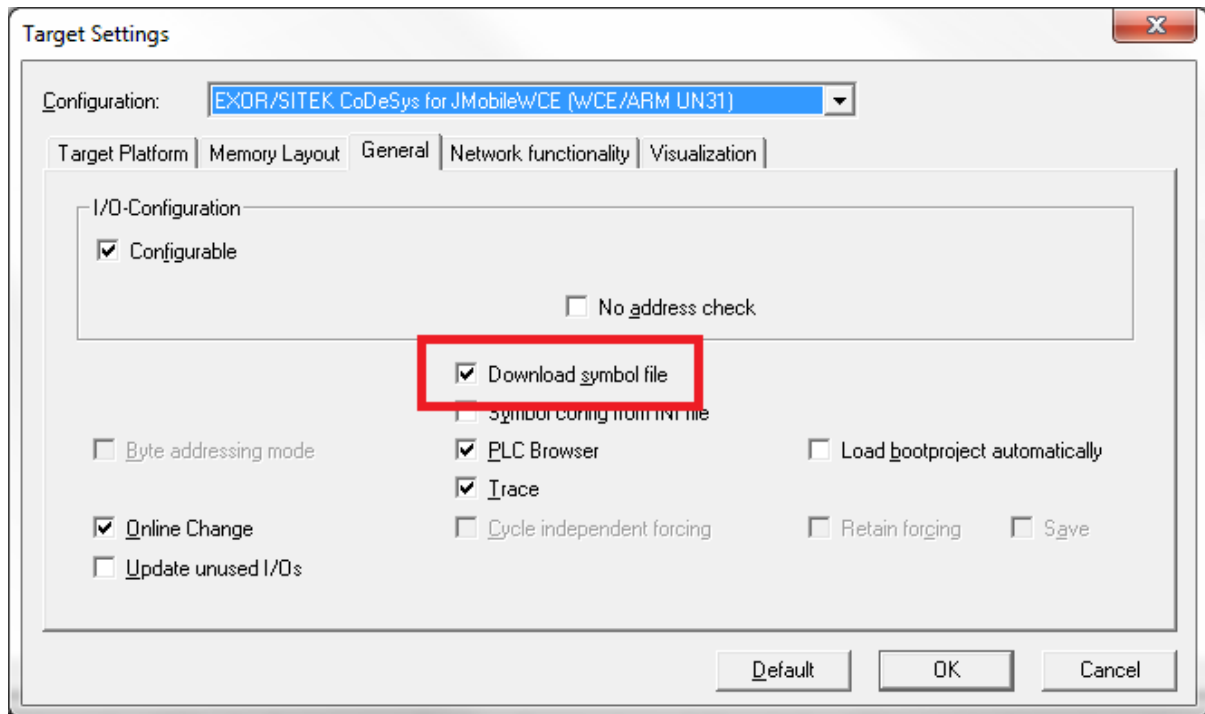


Figure 3

Note: CoDeSys Ethernet driver supports the automatic symbol file (SDB) upload from controller; any change in the tag offset due to new compilation on PLC software side does not require a symbol file re-import. Tag file has to be re-imported only in case of tag rename or addition of new tags.

Tag List Import

When configuring PLC using the manufacturer's configuration software, make sure to enable Symbol file creation (file with .SYM extension). It can be done under the CoDeSys programming software, by selecting "Project\Option\Symbol configuration" and mark the check box "Dump symbol entries" as shown in the picture below.

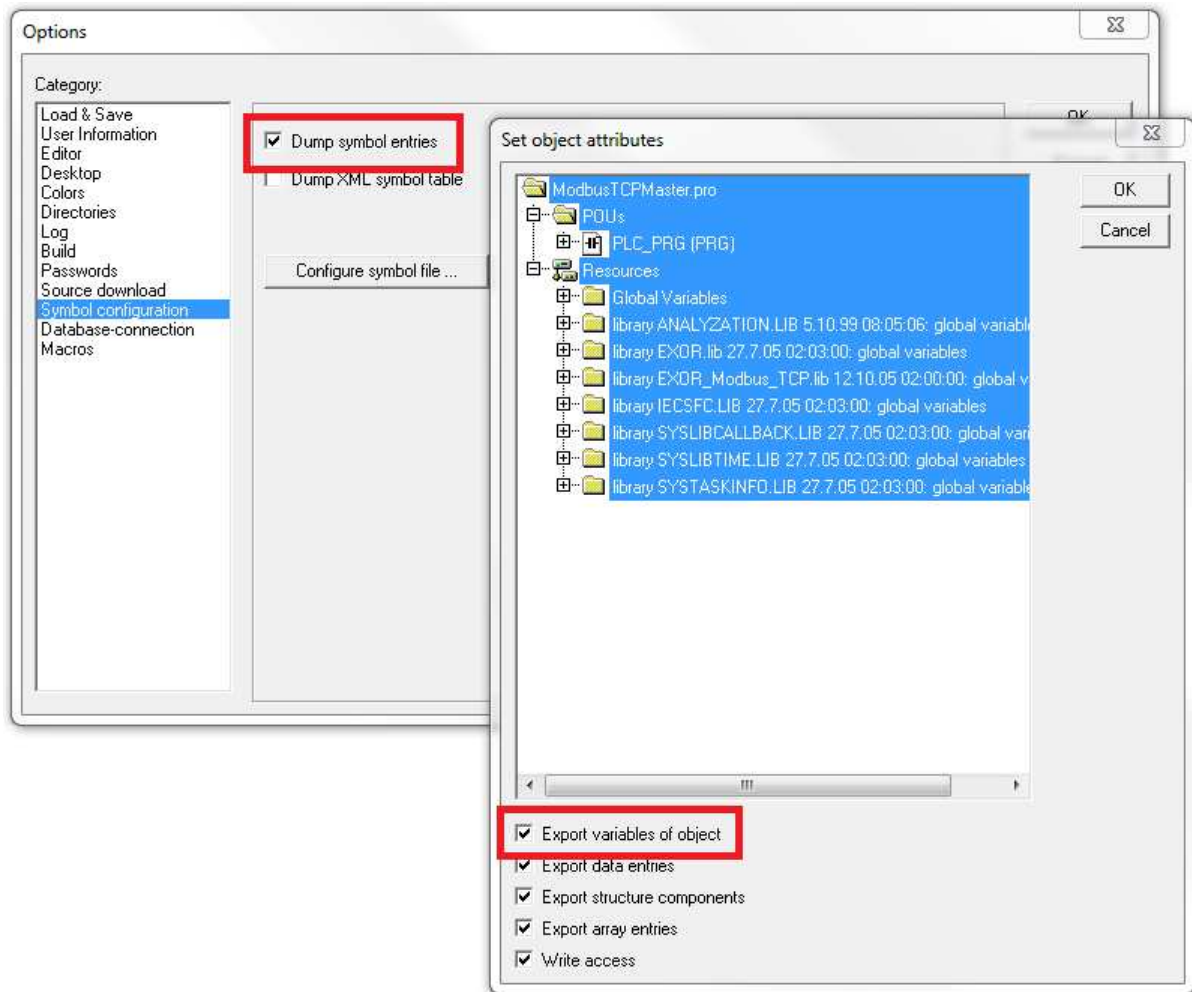


Figure 4

Click then on the “Configure symbol file...” button and make sure the “Export variables of object” check box is marked as shown in the following picture.

We recommend to un-check the check box and mark it again to be sure about the proper settings.

Data Types

The import module supports variables of standard data types and user defined data types.

Standard Data Types

The following data types in the CoDeSys programming tool are considered standard data types by the import module:

BOOL
 WORD
 DWORD
 INT
 UINT
 UDINT
 DINT

STRING
REAL
TIME
DATE & TIME

and 1-dimensional ARRAY of the types above.

The 64-bit data types LWORD, LINT and LREAL are not supported.

String length for a STRING variable in PLC should be max 80 characters. Declare a STRING variable either with a specified size (str:STRING(35)) or default size (str:STRING) which is 80 characters.

Limitations

Max block size is 1024 byte.

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
Symbols file not present	Check Symbol file and download again the PLC program
"tag" not present in Symbols files	Check if the Tag is present into the PLC project
Time out on Acknowledge	
Time out on last Acknowledge	Controller didn't sent last ack
Time out on data reciving	Controlled does not reply with data
Connection timeout	Device not connected