Schneider M series PLC
Codesys runtime

Driver documentation

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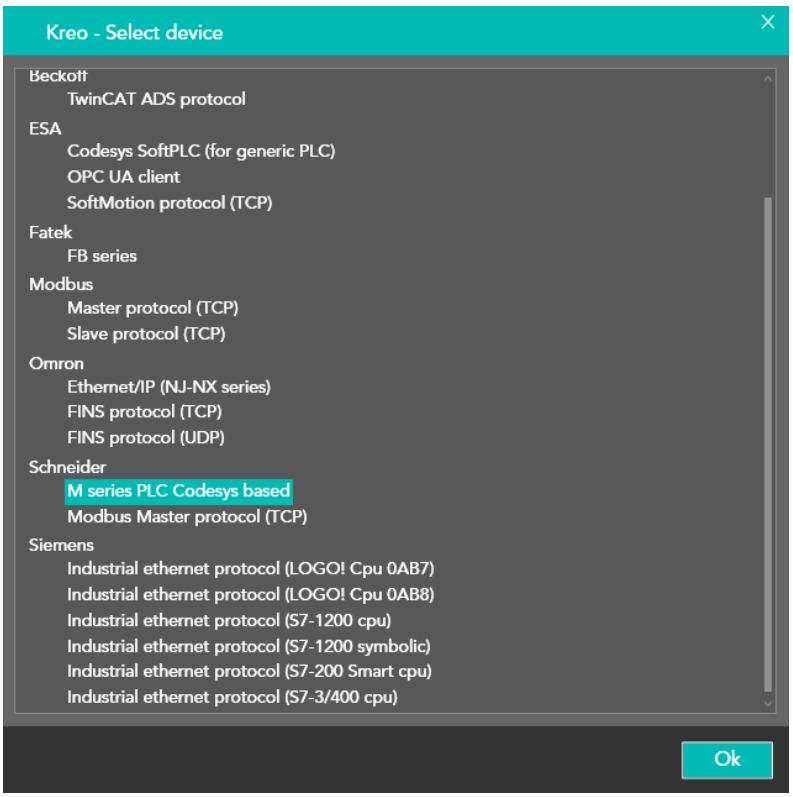
Document description

This document is dedicated to the functionalities and programming of the M series Schneider PLC.

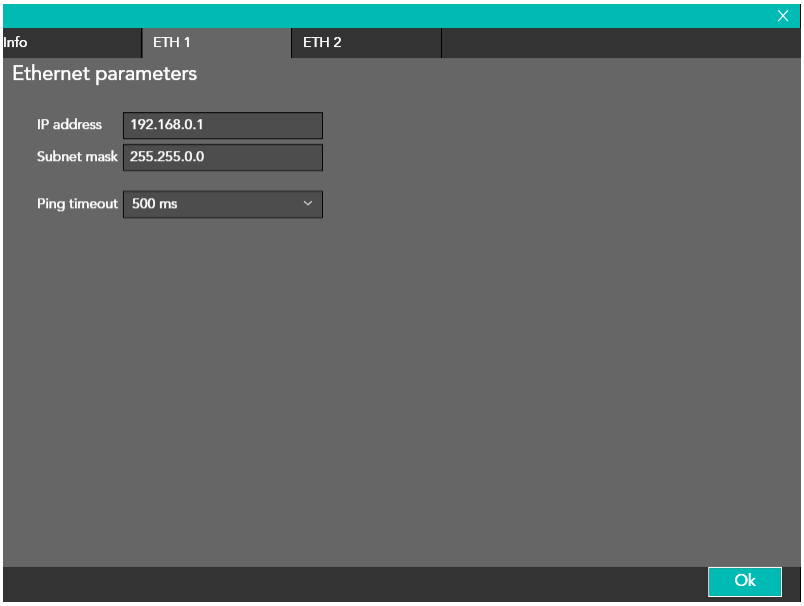
Driver selection



Select Schneider – M series PLC Codesys based from the Kreo driver portfolio.

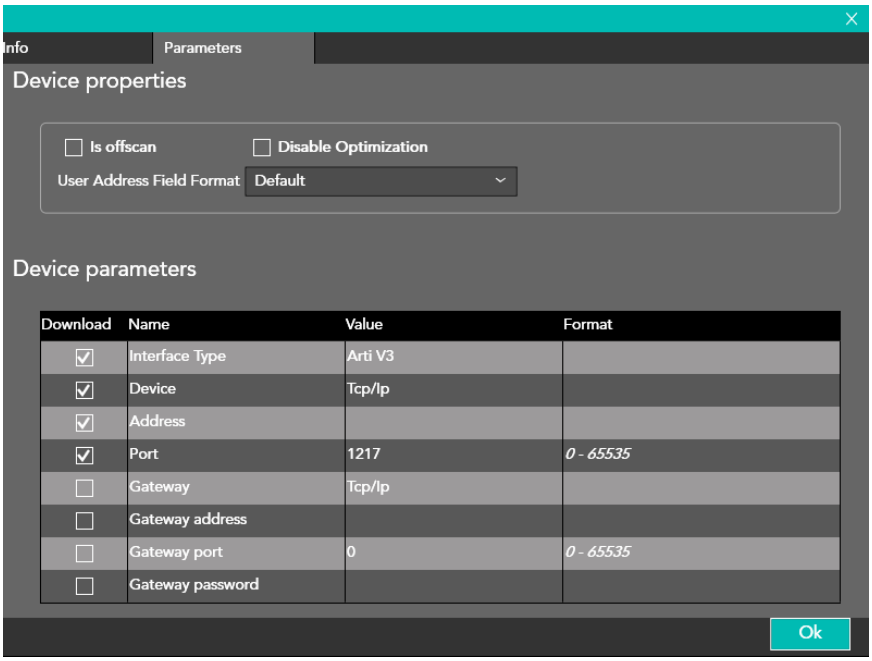
Communication parameters

The page below is displayed by clicking on the HMI model.



IP address	Ip address of the HMI port
Subnet mask	Subnet mask of the HMI port
Ping timeout	The PING command is sent to check the connection stability

The page below is displayed by double clicking over the communication driver



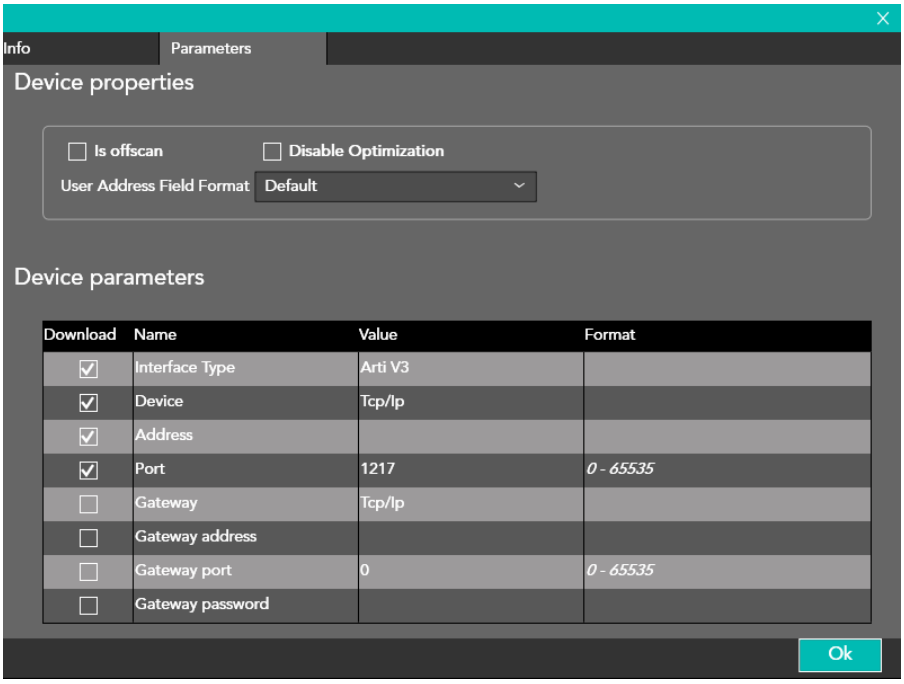
Is Offscan	The driver is defined in the project but will not be scheduled. In order to enable the driver it is mandatory to use the ST script function: TAG_SETOFFSCANDEV (device, state) TAG_SETOFFSCAN (Tag, state)
Disable Optimization	Disable the data optimization. Each tag will be refreshed with a separate communication message.
User Address Field Format	Tag address format. The default format is defined in the driver description but the user can select the desired format (DECIMAL or HEXADECIMAL)

IsOffscan
Is offscan management can be used in case a specific machine module will be part of the Kreo HMI project but will not be physically connected.

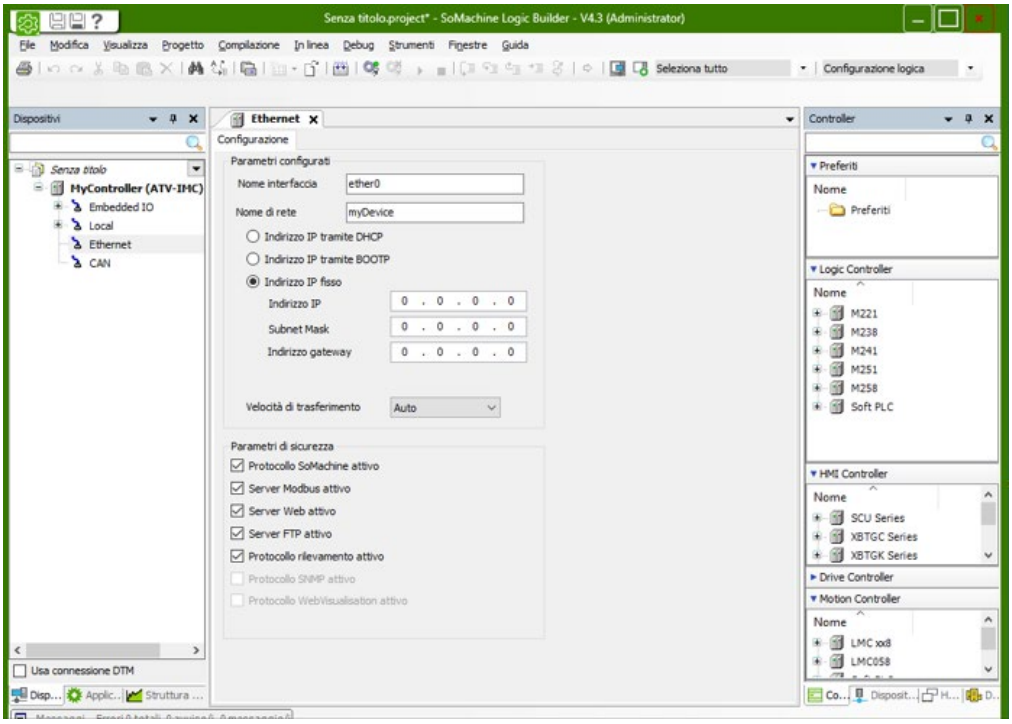
A NOT CONNECTED and ONSCAN device will reduce dramatically the performance of the page refresh due to the communication timeout.

Disable Optimization:
This option can be used in order to identify wich of the data displayed on a specific page is causing the communication error.
The value will not be displayed but a series of ????? will let the user identify the faulty tag to be fixed.

Codesys specific runtime parameters

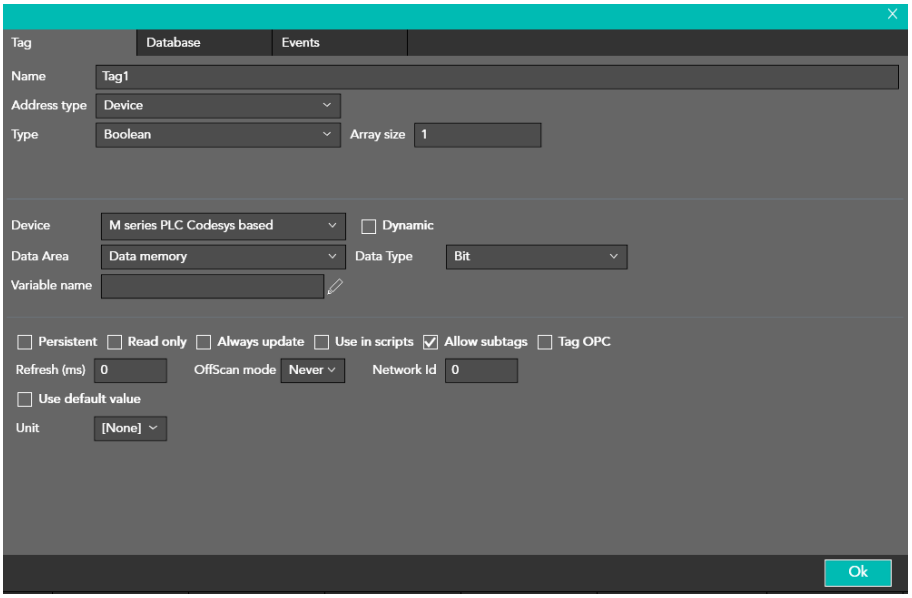


The default values of these parameters is selected in order to have the best optimization in term of data exchange.



Parameter	Description
Instance	Name identifying the parameter set
Interface Type	Communication setting between the ESA HMI and the Codesys runtime ARTI: direct communication without any need of external gateway GATEWAY: In order to start the communication an external gateway is mandatory (Gateway 3S). The Gateway, Gateway Address e Gateway port parameters are mandatory.
Device	SoftPLC runtime address definition: Tcp/Ip (Level 4): TCP/IP Level 4 Protocol Tcp/Ip (Level 2): TCP/IP Level 2 Protocol Tcp/Ip (Level 2 Route): TCP/IP Level 2 Route Serial (RS232): serial connection
Address	Softplc runtime address
Port	Softplc runtime port. If not used the default value is 11740.
TargetID	Necessary only for legacy products (ARTIv2, Gatewayv2) Runtime identifier
Motorola byteorder	Necessary only for legacy products (ARTIv2, Gatewayv2) PLC byte order
Motorola	Necessary only for legacy products (ARTIv2, Gatewayv2) PLC byte order
Gateway	Gateway node definition mode Tcp/Ip if the gateway is connected via any ethernet bus Local if the runtime is running on the same device
Gateway address	Gateway node address
Gateway port	Gateway port. If not defined the predefined port will be used GATEWAY2: 1210 GATEWAY3: 1217
Gateway password	Gateway access password. Mandatory for legacy device (Gatewayv2)
NoLogin	Mandatory for legacy device
Buffersize	Mandatory for legacy device Data buffer size
PrecheckIdentity	Mandatory for legacy device

Tag programming



The Tag addressing is totally symbolic.
The Tag name is the address itself.
If the Tag is part of a data structure, the Tag address is the complete path inside the structure.

Data Area

AREA	TYPE	DIM.	R/W	DESCRIPTION
Variable	Bool Sint Int Dint Real LReal LInt ULInt String	1 8 16 32 32 64 64 64 8	R/W	Read/Write access to the controller Tag area

- <TagName>: Simple Tag
- <TagName>[X]: Array element
- <TagName>.<ElementName>: Structure element

Error code

CODE	*DESCRIPTION*
DRIVER ERROR	The message cannot be sent HW problem at the port level
PROTOCOL ERROR	Generic error
PROTOCOL TIMEOUT	The HMI did not receive any reply from the PLC inside the time out window
PROTOCOL OFFLINE	The TCP/IP connection cannot be established
SOCKET ERROR	The ethernet socket cannot be created
TRANSMISSION ERROR	The TCP message cannot be created
ERROR	Unknown error

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