Siemens – S7 200 Smart CPU

Driver documentation

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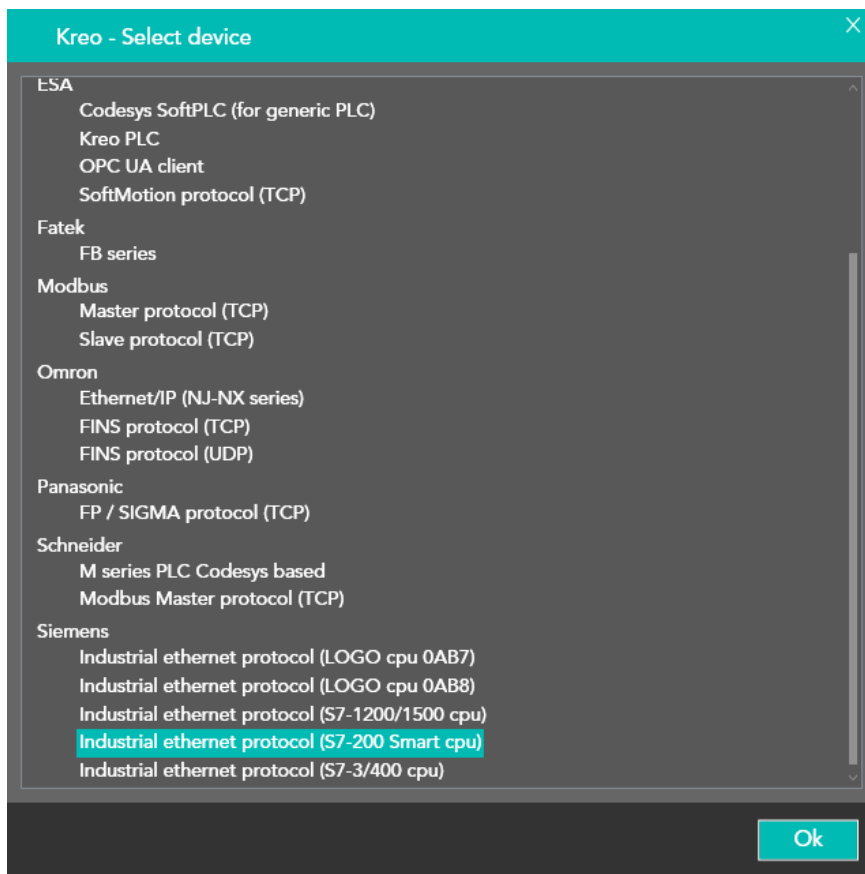
Document description

This document is dedicated to the programming and functionalities of the Siemens S7 200 Smart PLC communication driver.
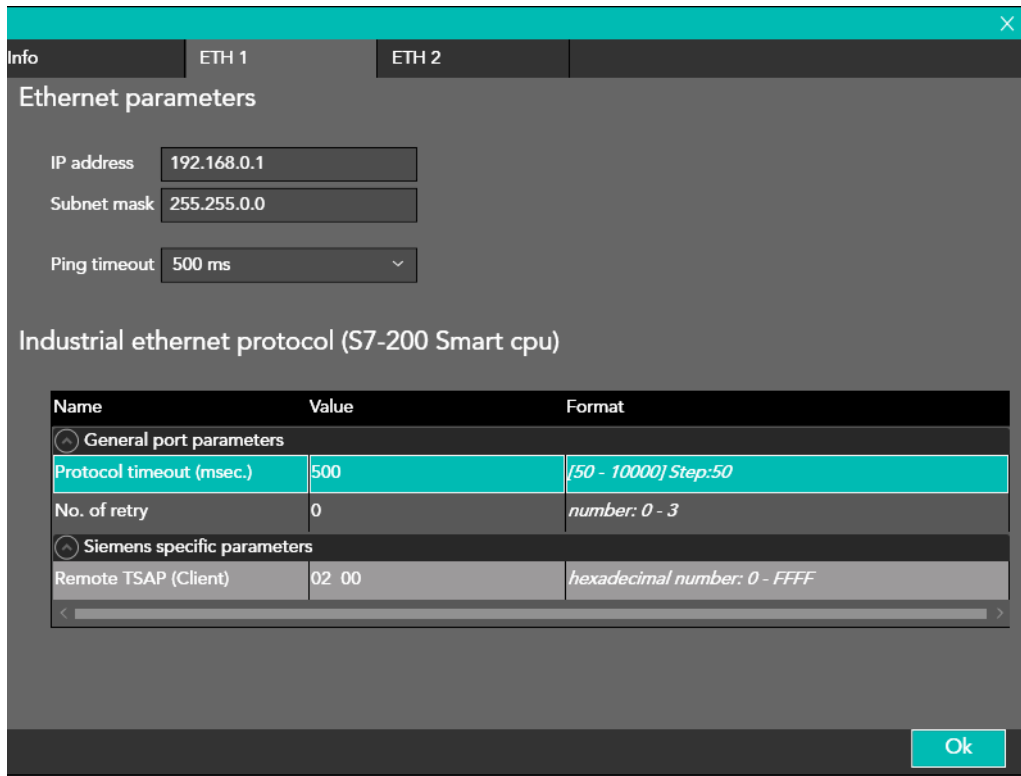
Driver selection

Select Siemens – Industrial ethernet protocol (S7 – 200 Smart cpu) in the Kreo HMI driver portfolio.

Communication parameters

The page below is displayed by double clicking over the HMI configuration.

IP address	Ip address of the HMI port
Subnet mask	Subnet mask of the HMI port
Ping timeout	The PING command is sent in order to test the connection stability
Protocol Timeout	The PLC has to reply before this time out window will expire in order not to have communication error
Remote TSAP (Client)	Same value defined in the local properties (TSAP)

The page below is displayed by double clicking over the Siemens communication driver:
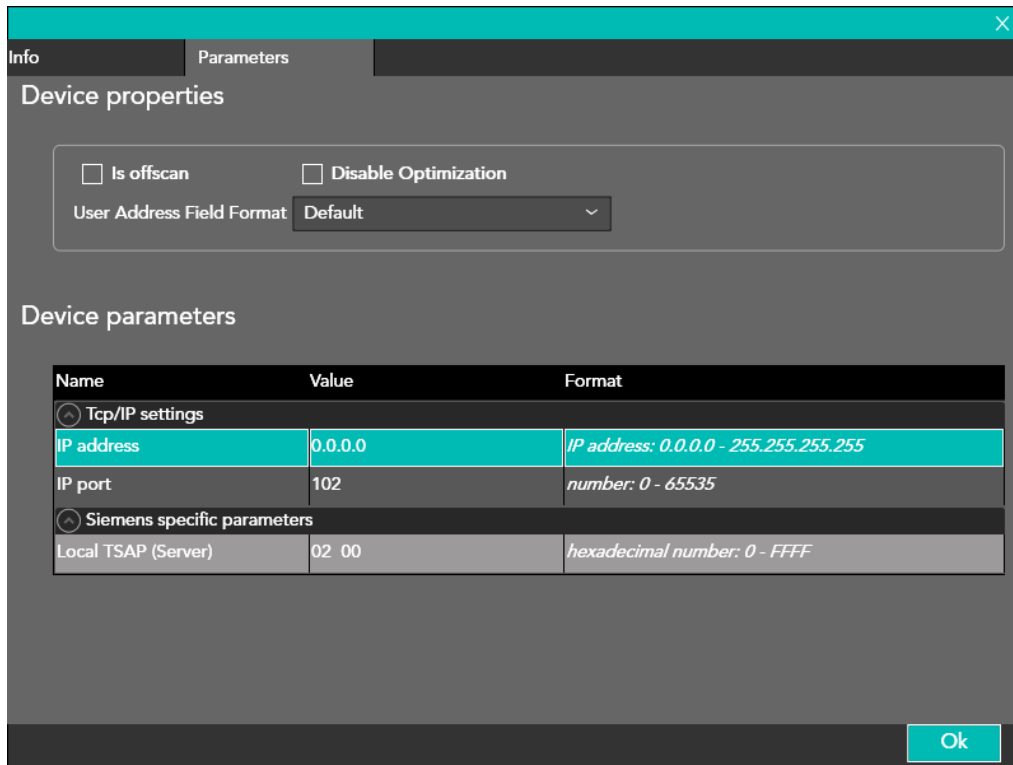
Is Offscan	The driver is defined in the project but will not be scheduled.
	In order to enable the driver it is mandatory to use the ST script function:
	TAG_SETOFFSCANDEV (device, state)
	TAG_SETOFFSCAN (Tag, state)
Disable the optimization	Disable the data optimization.
	Each tag will be refreshed 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)
IP address	Ip address of the PLC port
IP port	Communication port
	The default value is 502
Local TSAP	Same value defined in the local properties (TSAP)

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.

Tag definition

The memory mapping is based on the area that can be accessed in the PLC memory structure.

Memory areas

AREA	TIPO	DIM.	R/W	DESCRIZIONE
Data Block	Bit Byte Word Dword Real String String (Plc)	1 8 16 32 32 8 8	R/W	Read/Write of optimized data block area.
Data block (Simatic Time)	TimeBase 1/100s TimeBase 1/10s TimeBase 1s TimeBase 10s TimeBase AUTO String Format	32 32 32 32 32 32	R/W	Read/Write of data block registers formatted as SimaticTime
Timer	TimeBase 1/100s TimeBase 1/10s TimeBase 1s TimeBase 10s TimeBase AUTO String Format	32 32 32 32 32 32	R/W	Legge / scrive dati tipo Timer con rappresentazione formato SimaticTime (vedere sotto per funzionamento)
Counter	Value (Word)	16	R/W	Read/Write of the Counter value
Merker	Bit Byte Word Dword Real	1 8 16 32 32	R/W	Read/Write of the Merker area
Input	Bit Byte Word Dword Real	1 8 16 32 32	R/W	Read/Write of the Input area

Output	Bit	1	R/W	Read/Write of the Output area
	Byte	8		
	Word	16		
	Dword	32		
	Real	32		

Error codes

CODICE	DESCRIZIONE
DRIVER ERROR	The request message cannot be delivered.
PROTOCOL ERROR	Generic error
PROTOCOL TIMEOUT	The PLC did not reply to the request
PROTOCOL OFFLINE	The device is not connected. The TCP socket connection cannot be established
SOCKET ERROR	The device does not complete the socket procedure
PING FAIL	The device does not reply to the PING command
FORMAT DATA ERR	The value that is going to be written is not correct
TRANSMISSION ERROR	The TCP message cannot be delivered
ERROR	Driver socket not managed

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