Omron – FINS (TCP)

Driver documentation

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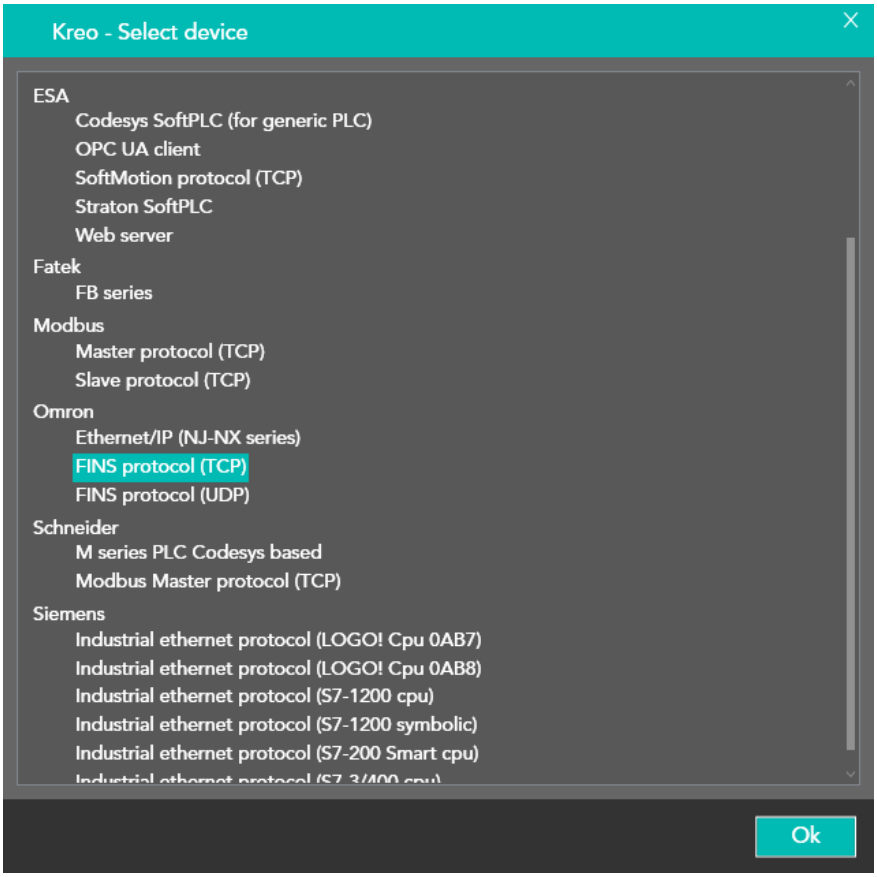
Document description

This document is dedicated to the functionalities and programming of the Omron FINS driver with TCP as transport protocol.

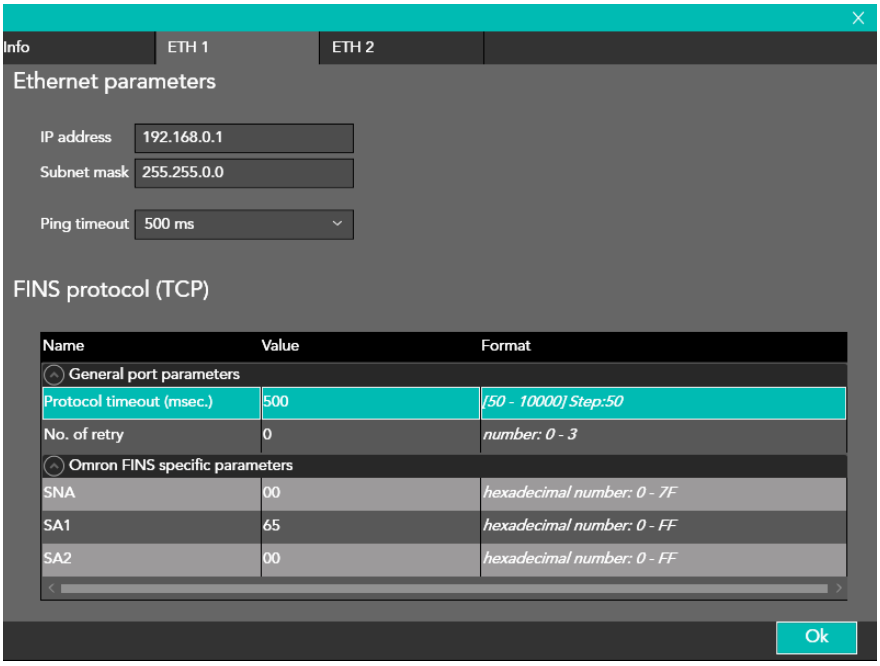
Driver selection



Select Omron FINS protocol (TCP) from the Kreo driver portfolio.

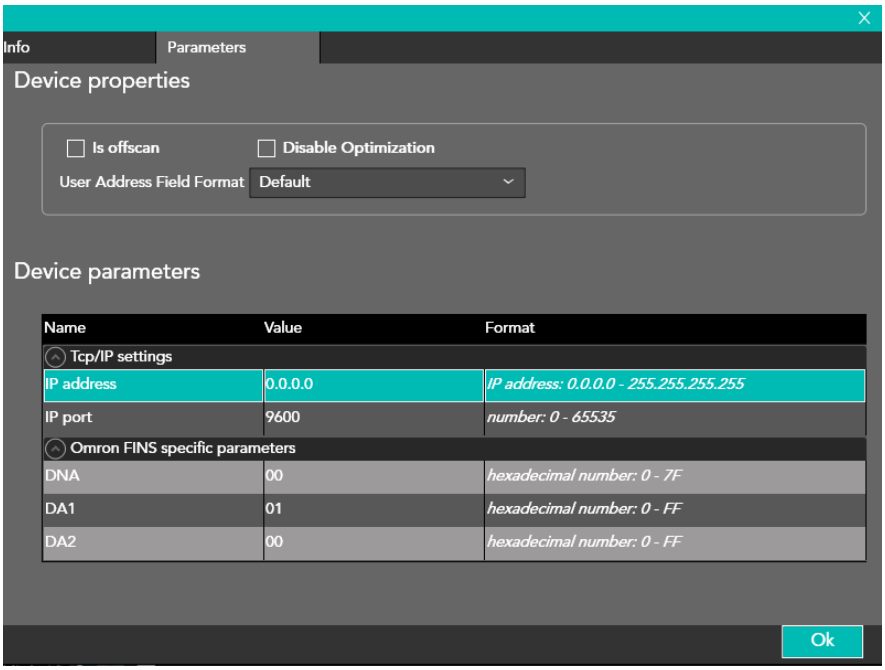
Communication parameter

The page below is displayed by double clicking over 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 in order to check the connection stability
Protocol Timeout	The PLC reply has to arrive inside this time out window
No. of retry	After these retries (each one with communication error) the HMI itself will be forced in the error status
SNA	Source Network Address FINS parameter for the HMI connection 00=Local, 01 to 7F, 65=PC link
SA1	Source Node Number FINS parameter for the HMI connection 01 to 3E, 01 to 1F in Host Link, FF Broadcast
SA2	Source Unit Address FINS parameter for the HMI connection 00=CPU, FE=Network board, 10+N°=CPU bus unit, 20+N°=CS1 spec. Unit

The page below is displayed by double clicking on 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)
IP address	IP address of the PLC port
IP port	Communication port. The default value is port 500
DNA	Destination Network Address FINS communication parameter 00=Local, 01 to 7F
DA1	Destination Node Number FINS communication parameter 01 to 3E, 01 ti 1F in Host Link, FF Broadcast

DA2	Destination Unit Address FINS communication parameter 00=CPU, FE=Network board, 10+N°=CPU bus unit, 20+N°=CS1 spec. Unit

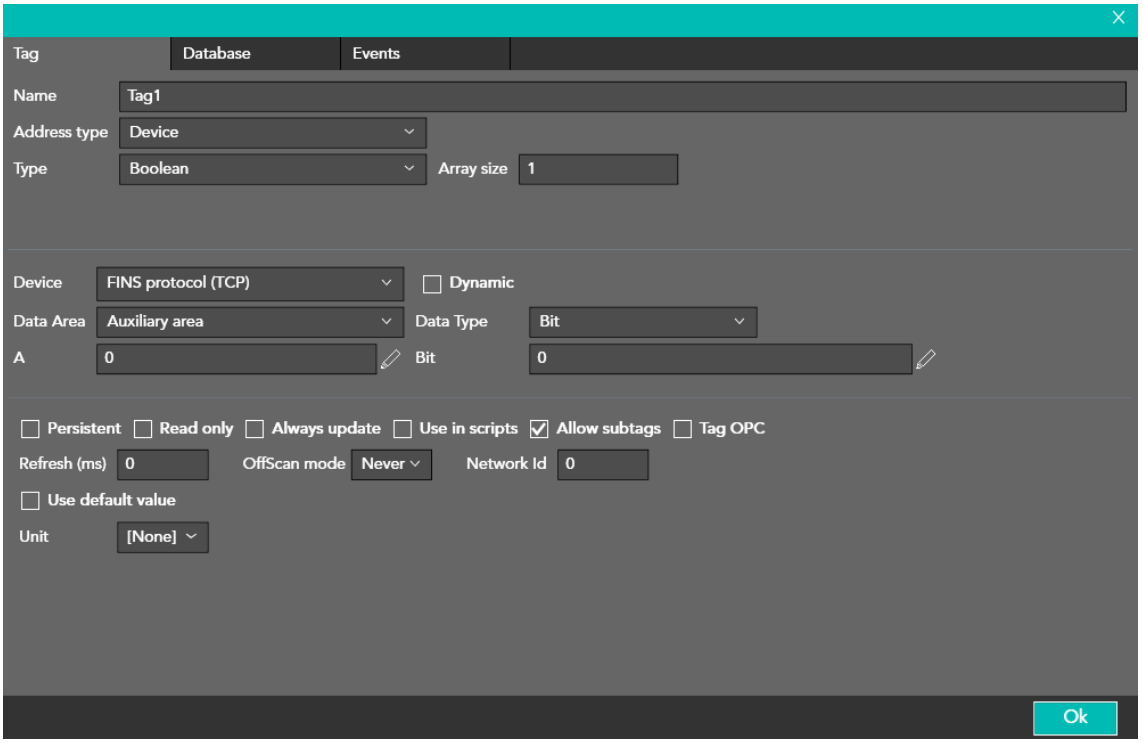
For the communication parameters setting please refer to the Omron user manual – FINS communication

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.

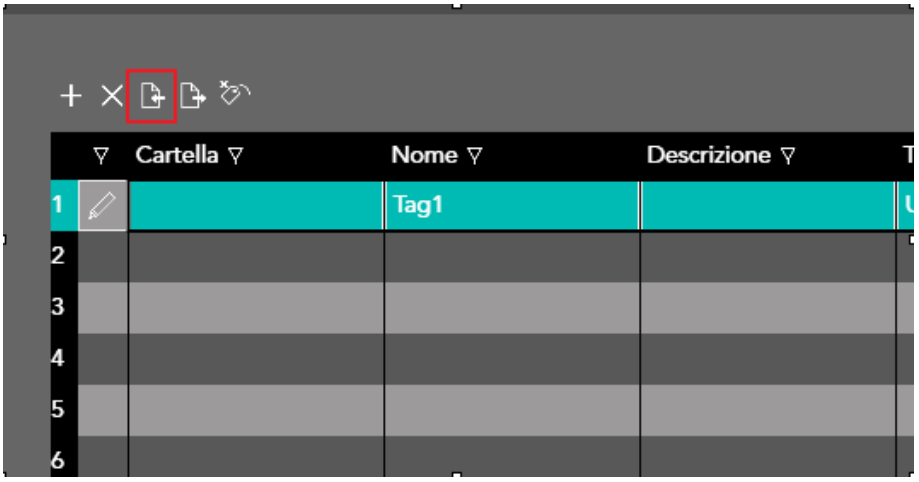
Tag programming



The Tag addressing is mapped over the different PLC memory areas.

Tag importing

The Tag database can be imported from the PLC programming environment selecting the icon displayed below:



The possible data formats are:

- Omron FINS (*.cxr)
- Omron FINS (*.xls)

Memory area

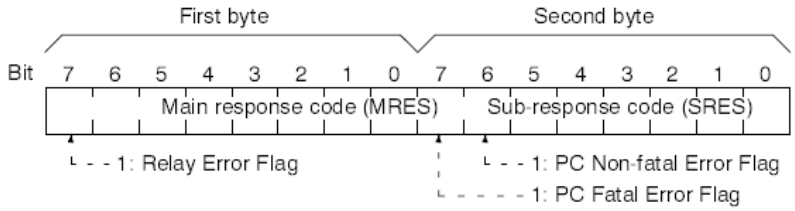
Auxiliary area	Bit Word Dword Real Double String	1 16 32 32 64 8	R/W	Read and write the specific area
Core Input/Core output area	Bit Word Dword	1 16 32	R/W	Read and write the specific area
Counter	Value (Word) Contact (Bit)	16 1	R/W	Read and write the specific area
Data Memory area	Word Dword Real Double String	16 32 32 64 8	R/W	Read and write the specific area
Data Register	Word	16	R/W	Read and write the specific area
Extended Memory Data area	Word Dword Real Double String	16 32 32 64 8	R/W	Read and write the specific area
Holding area	Bit Word Dword Real Double String	1 16 32 32 64 8	R/W	Read and write the specific area
Index Register	Dword	32	R/W	Read and write the specific area
Task Flag area	Bit	1	R/W	Read and write the specific area
Timer	Value (Word) Contact (Bit)	16 1	R/W	Read and write the specific area

Work area	Bit Word Dword Real Double String	1 16 32 32 64 8	R/W	Read and write the specific area

Error code

PING ERROR	The device is not replying to the PING command
DRIVER ERROR	The message cannot be dispatched
PROTOCOL ERROR	Generic error
PROTOCOL TIMEOUT	The PLC does not reply inside the time out window
SOCKET ERROR	The ethernet socket cannot be created. Hardware failure
TRANSMISSION ERROR	Transmission error
PLC CODE ERR	See the notes below
ERROR	Unkown erro

In case of PLC code error “PLC CODE ERR: XXXX” the code displayed has a specific meaning in order to identify the specific error.



The detailed error code description is available in the Omron manual: “Omron_FINS_W227E11.pdf”.

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