Rockwell: Ethernet Ip Control Logix family

Driver Documentation

Connect
Ideas.
Shape
solutions.

Table of contents

Document description ***3***

Driver selection ***3***

Communication parameters ***4***

Tag programming ***6***

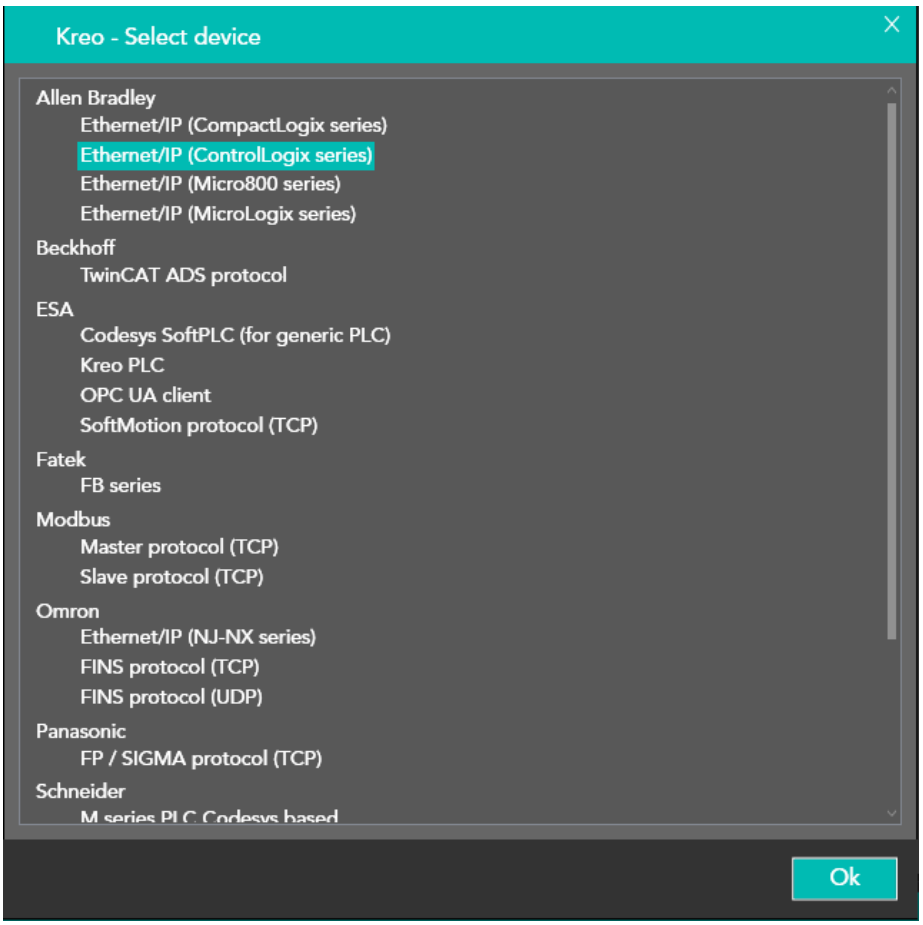
Data Area ***7***

Error codes ***8***

Document description

This document is dedicated to the programming and functionalities of the Rockwell ControlLogix series driver included in the platform KREO HMI.

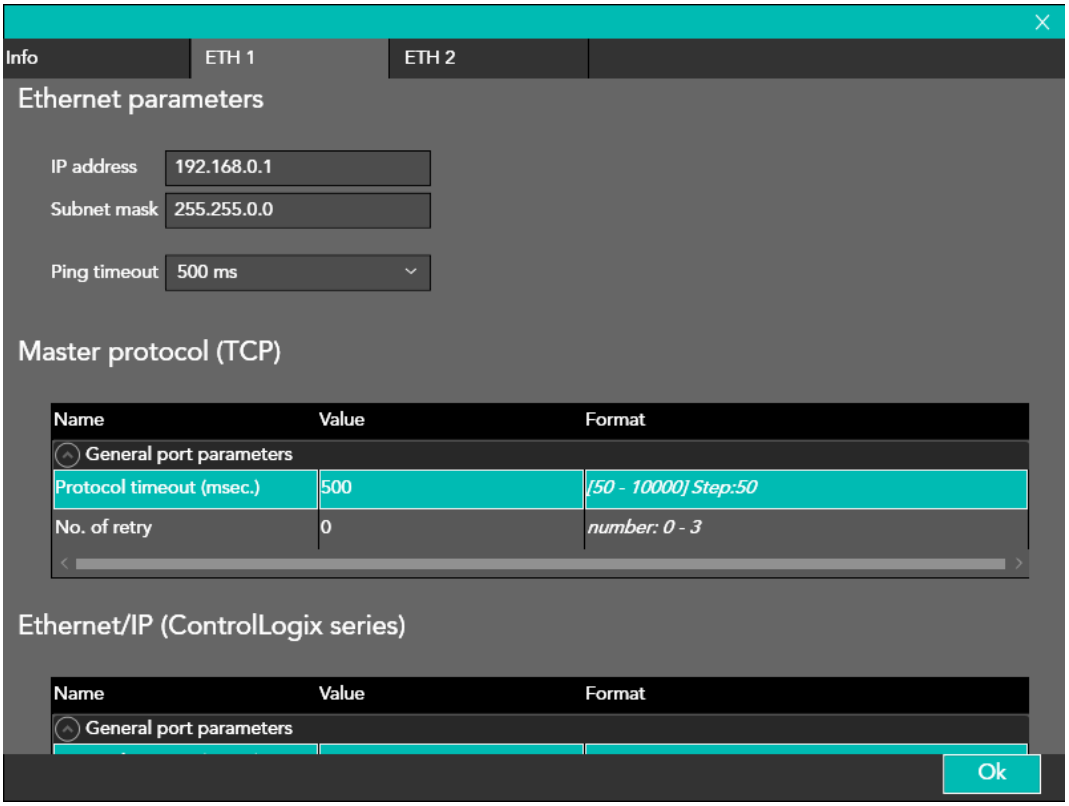
Driver selection



In the KREO HMI driver portfolio select Rockwell – Ethernet/IP ControlLogix series.

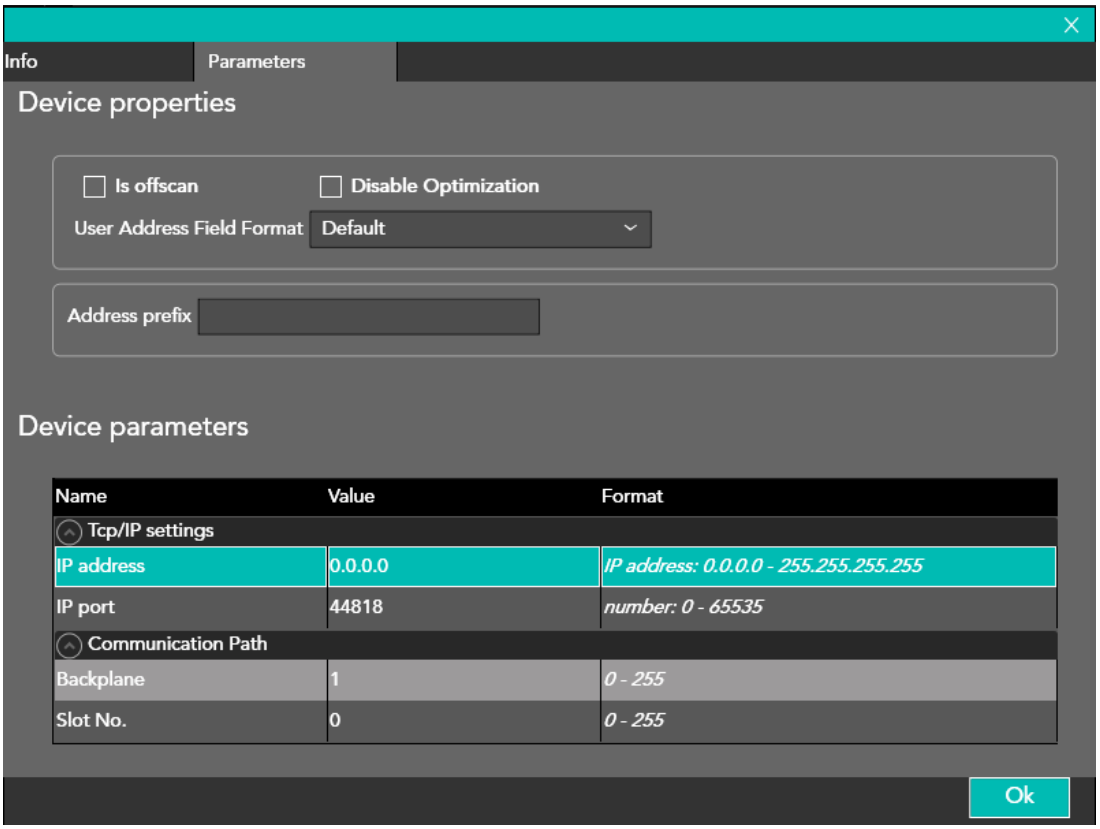
Communication parameters

Double click on the HMI model; the page below will be displayed.



IP address	IP address of the HMI port connected to the ControlLogix PLC
Subnet mask	IP subnet of the HMI port connected to the ControlLogix PLC
Ping timeout	this Ping command is sent to the PLC in order to check the stability of the connection
Protocol timeout	Ethernet IP communication timeout. The PLC has to reply to the HMI inside this timeout in order not to force the application in error mode.
No. of retry	how many messages have to be sent (each of them causing a communication error) before forcing the HMI itself in error mode.

Double click on the driver Id; the page below will be displayed.



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)
Address prefix	Prefix that will be added at the beginning of the Tag addressing string.
IP address	IP address of the PLC port
IP port	Communication port The default value is based on the driver selected
Backplane	Backplane number where the CPU is inserted. 1 is the first backplane. In case of a point to point connection to a single PLC this parameter must be 1

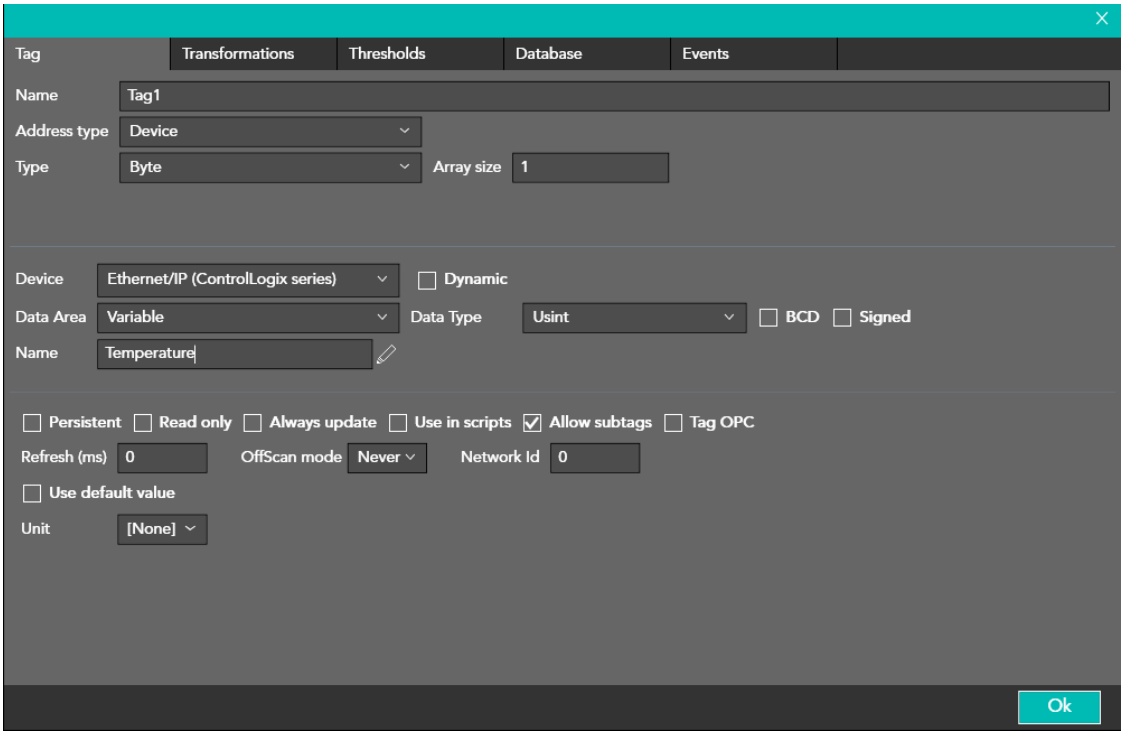
Slot No.	Slot number inside the backplane where the CPU is inserted. The first slot is identify via the value 0

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 addressing is fully symbolic so the Tag Name will be the tag address itself.
In case of a data structure the Tag path will follow the data structure tree.

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 and write access to to the PLC area “Controller TAGs” with the defined data format

- <TagName>: simple Tag
- <TagName>[X]: array element
- <TagName>.<ElementName>: structure element

Error codes

CODE	*DESCRIPTION*
DRIVER ERROR	The message cannot be sent. Hardware problem of the communication port
PROTOCOL ERROR	Generic error.
PROTOCOL TIMEOUT	No reply has been sent by the PLC to the HMI request
PROTOCOL OFFLINE	The TCP/IP connection is not possible
SOCKET ERROR	The ethernet socket cannot be created.
TRANSMISSION ERROR	The TCP message cannot be created
ERROR	Unknown error

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