



VACUUM-AUTOMATION

Function Block-Documentation

„FB_SCTSi_ETH_ISDU“ – Allen Bradley – Studio 5000

Version 01 | 03.2020

Note

This document were originally written in German and have been translated into English.
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Published by

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1 Function block "FB_SCTSi_ETH_ISDU"

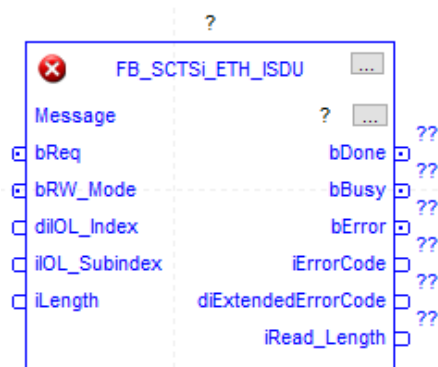
1.1 Brief description

This function block is used to read and write IO-Link parameters (ISDU) of an IO-Link master of an SCTSi Ethernet with Ethernet IP.

Please refer to the respective parameter lists for the documents of the corresponding products.

1.2 Image of function block

Example of function block:



1.3 Parameter - Input

name	data type	description
Message	MESSAGE	Configuration of the message function
bReq	BOOL	Execute the read or write process
bRW_Mode	BOOL	Select the mode: 0 = Read 1 = Write
diIOL_Index	DINT	Index of the object to be used
iIOL_Subindex	INT	Subindex of the object to be used
iLength	INT	Number of data to be used in bytes (only necessary when writing)

1.4 Parameter - Output

name	data type	description
bDone	BOOL	Record was read or transferred
bBusy	BOOL	Is active during the processing of the process until a feedback occurs
bError	BOOL	Will be activated if an error has occurred
iErrorCode	INT	Returns the error information (see additional information)
diExtendedErrorCode	DINT	Returns the extended error information (see additional information)
iRead_Length	INT	Returns the actually read length of the object

1.6 Additional information

To map the functions, the corresponding system function Message was used. For information on the error code, see the documentation on the system function.

The extended error code refers to the error codes of the document "IOL-Interface-Spec_10002_V112_Jul13" for ISDU errors.

To use the function module correctly, 2 variables must be declared in each case.

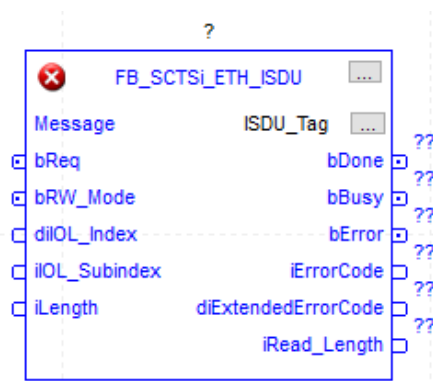
The variable "ISDU_Data" is used to provide the read data or to enter the data to be written.

Example variable declaration:

+ ISDU_Data	{ ... }	{ ... }	Decimal	SINT[200]
+ ISDU_Tag	{ ... }	{ ... }		MESSAGE

After successful insertion of the function block "FB_PARA_RW_ETH", the corresponding tag must be parameterized and the message configuration opened.

Example function block:



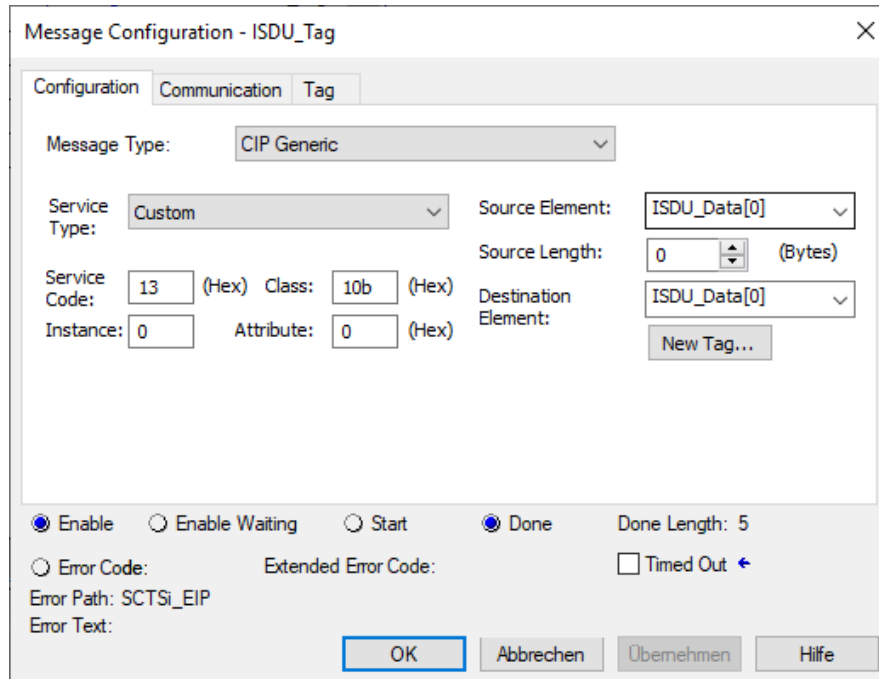
Using the "Service Code" of the message function, the corresponding IO-Link master can be entered with the respective port.

IO-Link Master 1	Service Code
Port 1	11
Port 2	12
Port 3	13
Port 4	14

IO-Link Master 2	Service Code
Port 1	21
Port 2	22
Port 3	23
Port 4	24

The corresponding "Message Type" and "Service Type" must be selected in the Message Configuration. Furthermore, the desired "Service Code" must be entered. Next, the "Destination Element" is declared for reading and the "Source Element" for writing.

Example message configuration:



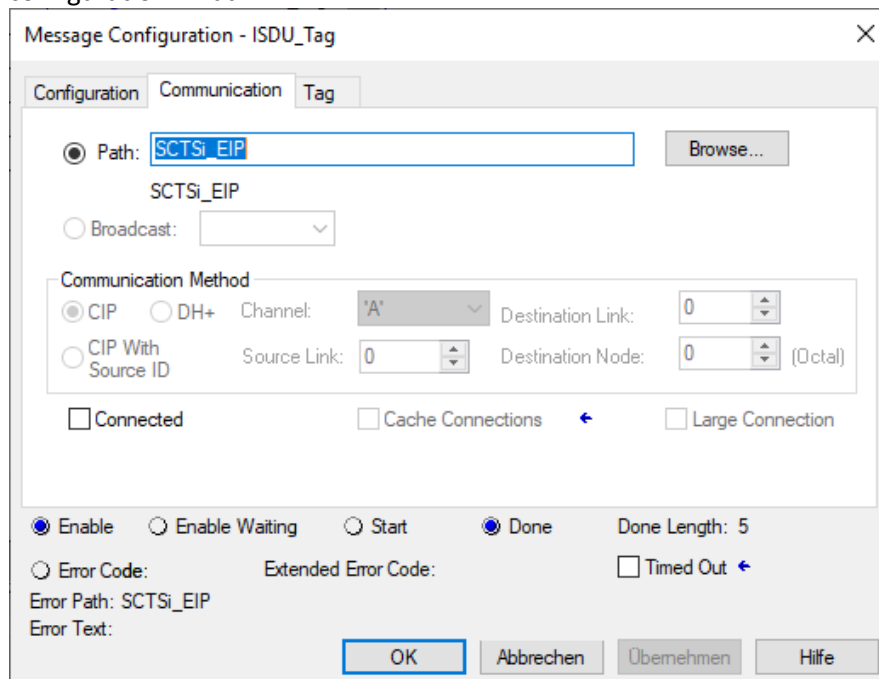
The dialog box "Message Configuration - ISDU_Tag" has three tabs: "Configuration", "Communication", and "Tag". The "Configuration" tab is active. It contains the following fields:

- Message Type: CIP Generic (dropdown)
- Service Type: Custom (dropdown)
- Source Element: ISDU_Data[0] (dropdown)
- Source Length: 0 (spin box) (Bytes)
- Service Code: 13 (Hex) Class: 10b (Hex)
- Destination Element: ISDU_Data[0] (dropdown)
- Instance: 0 Attribute: 0 (Hex)
- New Tag... (button)

At the bottom, there are radio buttons for "Enable", "Enable Waiting", "Start", and "Done" (selected). To the right of "Done" is "Done Length: 5". Below these are "Error Code:", "Extended Error Code:", and "Timed Out" (checkbox). The "Error Path" is "SCTSi_EIP" and "Error Text" is empty. At the bottom are buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

To set the communication to the desired device, you have to change to the "Communication" tab. There, under "Path", after selecting "Browse", the corresponding device can be selected.

Example message configuration – Path:



The dialog box "Message Configuration - ISDU_Tag" is shown with the "Communication" tab active. It contains the following fields:

- Path: SCTSi_EIP (text box) with a "Browse..." button to its right.
- Broadcast: (radio button) (dropdown)
- Communication Method:
 - CIP (selected radio button) Channel: 'A' (dropdown) Destination Link: 0 (spin box)
 - DH+ (radio button)
 - CIP With Source ID (radio button) Source Link: 0 (spin box) Destination Node: 0 (spin box) (Octal)
- Connected (checkbox) Cache Connections (checkbox) Large Connection (checkbox)

At the bottom, there are radio buttons for "Enable", "Enable Waiting", "Start", and "Done" (selected). To the right of "Done" is "Done Length: 5". Below these are "Error Code:", "Extended Error Code:", and "Timed Out" (checkbox). The "Error Path" is "SCTSi_EIP" and "Error Text" is empty. At the bottom are buttons: "OK", "Abbrechen", "Übernehmen", and "Hilfe".

2 Appendix

2.1 List of abbreviations

abbreviation	description
FB	Function block
EPC	Energy- and Processcontrol
CM	Condition Monitoring
EM	Energy Monitoring
PM	Predictive Maintenance

2.2 Note

- The byte order of the product is represented as big endian.

2.3 Extended Error Code (ISDU Errors)

See also „IOL-Interface-Spec_10002_V112_Jul13“.

Extended Error Code	Ereignis
0x8000	Device application error – no details
0x8011	Index not available
0x8012	Subindex not available
0x8020	Service temporarily not available
0x8021	Service temporarily not available – local control
0x8022	Service temporarily not available – Device control
0x8023	Access denied
0x8030	Parameter value out of range
0x8031	Parameter value above limit
0x8032	Parameter value below limit
0x8033	Parameter length overrun
0x8034	Parameter length underrun
0x8035	Function not available
0x8036	Function temporarily unavailable
0x8040	Invalid parameter set
0x8041	Inconsistent parameter set
0x8082	Application not ready
0x8100	Vendor specific
0x8101 to 0x81FF	Vendor specific

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