

## 9-8 TCP/UDP Message Service

### 9-8-1 Outline of TCP/UDP Message Service

TCP/UDP socket communication to enable simple access to the CIP object of the Controller from systems which do not support EtherNet/IP is possible. This enables change of settings and I/O control of the units connected to the Controller and NX bus. The service can be executed simultaneously with the tag data link communications.

This service can only be used on the NX102 CPU Unit.

### 9-8-2 Specifications of TCP/UDP Message Service

Item	Specifications
Maximum number of clients which can be connected simultaneously	32 (UDP and TCP respectively)
Maximum message size	Request: 492 bytes Response: 496 bytes
Maximum NX data output size	Maximum size of NX output data which can be written with the TCP/UDP message service 488 bytes
Maximum NX data input size	Maximum size of NX input data which can be read with the TCP/UDP message service 496 bytes
Port number	Port number used in the TCP/UDP message service Default value: 64000 (decimal number)

### 9-8-3 Settings Required for TCP/UDP Message Service

When you use the TCP/UDP message service, you need to set the following unit settings.

This setting can be set to the Sysmac Studio version 1.23 or higher.

Sysmac Studio Unit Settings Tab Page	Setting	Setting conditions	Setting range	Default
TCP/UDP message service	Use/Do not use TCP/UDP message service	Optional	Use/Do not use	Do not use
	Port 1-Port No.	Optional	1024-65535*1	64000
	Port 2-Port No.	Optional	1024-65535*1	64000

\*1 When you use the TCP socket, the following ports are used by the system and cannot be set by the user: 20, 23, 25, 80, 110, 9610, and 44818.

When you use the UDP socket, the following ports are used by the system and cannot be set by the user: 25, 53, 68, 110, 2222, 2223, 2224, 9600, and 44818.

## 9-8-4 Command Format Specifications

### ● Request Command

Parameter name	Offset address	Size (bytes)	Description	Example of VendorID readout*1
Sequence No.	0	2	The user specifies any number. The number specified here is stored in the sequence No. of the response command corresponding to the request command.	1000
Reserved 1	2	2	Reserved. Specify 0.	0000
Data Size	4	2	Specify the command size after <i>Reserved 2</i> parameter.	0800
Reserved 2	6	1	Reserved. Specify 0.	00
Service code	7	1	CIP service	0E
Class ID	8	2	CIP object class ID	0100
Instance ID	10	2	CIP object instance ID	0100
Attribute ID	12	2	CIP object attribute ID. Specify if attribute ID specification is required in the specified CIP service. This can be omitted if specification is not required.	0100
Data	12*2	Maximum 492*3	Specify request data.	---

\*1 This shows in hexadecimal and little-endian.

\*2 14 when attribute ID is specified.

\*3 488 when attribute ID is specified.

### ● Respond Command

Parameter name	Offset address	Size (bytes)	Description	Example of VendorID readout*1
Sequence No.	0	2	The number specified here is stored in the sequence No. of the response command corresponding to the request command.	1000
Data Size	2	2	The command size after <i>Reserved</i> parameter is stored.	0600
Reserved	4	1	Reserved. 0 is stored.	00
Service code	5	1	The executed service code+most significant bit 1 are stored.	8E
General status	6	1	00 is stored when the service ends normally, and values other than 00 when the service ends in error. The status code stored when error occurs conforms to the CIP General Status Code.	00
Additional status size	7	1	00 is stored when the service ends normally. If the service ends in error, the Additional status size (word size) stored in the <i>Data</i> area will be stored.	00
Data	8	Maximum 496	The response data is stored when the service ends normally. If the service ends in error, the Additional status will be stored for the word size stored in the <i>Additional status size</i> .	2F00

\*1 This shows in hexadecimal and little-endian.