

## Response Codes

### General Status Code

The General Status Code is stored in the response data after execution of the CMND instruction has been completed.

General Status Code (hex)	Status Name	Description of Status
00	Success	Service was successfully performed by the object specified.
01	Connection failure	A connection related service failed along the connection path.
02	Resource unavailable	Resources needed for the object to perform the requested service were unavailable.
03	Invalid parameter value	See Status Code 20 hex, which is the preferred value to use for this condition.
04	Path segment error	The path segment identifier or the segment syntax was not understood by the processing node. Path processing shall stop when a path segment error is encountered.
05	Path destination unknown	The path is referencing an object class, instance or structure element that is not known or is not contained in the processing node. Path processing shall stop when a path destination unknown error is encountered.
06	Partial transfer	Only part of the expected data was transferred.
07	Connection lost	The messaging connection was lost.
08	Service not supported	The requested service was not implemented or was not defined for this Object Class/Instance.
09	Invalid attribute value	Invalid attribute data detected.
0A	Attribute list error	An attribute in the Get_Attribute_List or Set_Attribute_List response has a non-zero status.
0B	Already in requested mode/state	The object is already in the mode/state being requested by the service.
0C	Object state conflict	The object cannot perform the requested service in its current mode/state.
0D	Object already exists	The requested instance of object to be created already exists.
0E	Attribute not settable	A request to modify a non-modifiable attribute was received.
0F	Privilege violation	A permission/privilege check failed.
10	Device state conflict	The device's current mode/state prohibits the execution of the requested service.
11	Reply data too large	The data to be transmitted in the response buffer is larger than the allocated response buffer
12	Fragmentation of a primitive value	The service specified an operation that is going to fragment a primitive data value, i.e. half a REAL data type.
13	Not enough data	The service did not supply enough data to perform the specified operation.
14	Attribute not supported	The attribute specified in the request is not supported.
15	Too much data	The service supplied more data than was expected.
16	Object does not exist	The object specified does not exist in the device.
17	Service fragmentation sequence not in progress	The fragmentation sequence for this service is not currently active for this data.
18	No stored attribute data	The attribute data of this object was not saved prior to the requested service.
19	Store operation failure	The attribute data of this object was not saved due to a failure during the attempt.
1A	Routing failure (request packet too large)	The service request packet was too large for transmission on a network in the path to the destination. The routing device was forced to abort the service.
1B	Routing failure (response packet too large)	The service response packet was too large for transmission on a network in the path from the destination. The routing device was forced to abort the service.
1C	Missing attribute list entry data	The service did not supply an attribute in a list of attributes that was needed by the service to perform the requested behavior.

General Status Code (hex)	Status Name	Description of Status
1D	Invalid attribute value list	The service is returning the list of attributes supplied with status information for those attributes that were invalid.
1E	Embedded service error	An embedded service resulted in an error.
1F	Vendor specific error	A vendor specific error has been encountered. The Additional Code Field of the Error Response defines the particular error encountered. Use of this General Error Code should only be performed when none of the Error Codes presented in this table or within an Object Class definition accurately reflect the error.
20	Invalid parameter	A parameter associated with the request was invalid. This code is used when a parameter does not meet the requirements of this specification and/or the requirements defined in an Application Object Specification.
21	Write-once value or medium already written	An attempt was made to write to a write-once medium (e.g. WORM drive, PROM) that has already been written, or to modify a value that cannot be changed once established.
22	Invalid Reply Received	An invalid reply is received (e.g. reply service code does not match the request service code, or reply message is shorter than the minimum expected reply size). This status code can serve for other causes of invalid replies.
23-24		Reserved by CIP for future extensions
25	Key Failure in path	The Key Segment that was included as the first segment in the path does not match the destination module. The object specific status shall indicate which part of the key check failed.
26	Path Size Invalid	The size of the path which was sent with the Service Request is either not large enough to allow the Request to be routed to an object or too much routing data was included.
27	Unexpected attribute in list	An attempt was made to set an attribute that is not able to be set at this time.
28	Invalid Member ID	The Member ID specified in the request does not exist in the specified Class/Instance/Attribute.
29	Member not settable	A request to modify a non-modifiable member was received.
2A	Group 2 only server general failure	This error code may only be reported by DeviceNet group 2 only servers with 4K or less code space and only in place of Service not supported, Attribute not supported and Attribute not settable.
2B-CF	---	Reserved by CIP for future extensions
D0-FF	Reserved for Object Class and service errors	This range of error codes is to be used to indicate Object Class specific errors. Use of this range should only be performed when none of the Error Codes presented in this table accurately reflect the error that was encountered.

**Example of Additional Status in case that General Status Is 01 Hex.  
(Status of Connection Manager Object)**

General Status (hex)	Additional Status (hex)	Explanation
01	0100	Connection in Use or Duplicate Forward Open.
01	0103	Transport Class and Trigger combination not supported
01	0106	Ownership Conflict
01	0107	Connection not found at target application.
01	0108	Invalid Connection Type. Indicates a problem with either the Connection Type or Priority of the Connection.
01	0109	Invalid Connection Size
01	0110	Device not configured
01	0111	RPI not supported. May also indicate problem with connection time-out multiplier, or production inhibit time.
01	0113	Connection Manager cannot support any more connections
01	0114	Either the Vendor Id or the Product Code in the key segment did not match the device
01	0115	Product Type in the key segment did not match the device
01	0116	Major or Minor Revision information in the key segment did not match the device
01	0117	Invalid Connection Point
01	0118	Invalid Configuration Format
01	0119	Connection request fails since there is no controlling connection currently open.
01	011A	Target Application cannot support any more connections
01	011B	RPI is smaller than the Production Inhibit Time.
01	0203	Connection cannot be closed since the connection has timed out
01	0204	Unconnected Send timed out waiting for a response.
01	0205	Parameter Error in Unconnected Send Service
01	0206	Message too large for Unconnected message service
01	0207	Unconnected acknowledge without reply
01	0301	No buffer memory available
01	0302	Network Bandwidth not available for data
01	0303	No Tag filters available
01	0304	Not Configured to send real-time data
01	0311	Port specified in Port Segment Not Available
01	0312	Link Address specified in Port Segment Not Available
01	0315	Invalid Segment Type or Segment Value in Path
01	0316	Path and Connection not equal in close
01	0317	Either Segment not present or Encoded Value in Network Segment is invalid.
01	0318	Link Address to Self Invalid
01	0319	Resources on Secondary Unavailable
01	031A	Connection already established
01	031B	Direct connection already established
01	031C	Miscellaneous
01	031D	Redundant connection mismatch
01	031F	No connection resources exist for target path
01	0320-07FF	Vendor specific

## Priority/Time Ticks and Time Out Ticks

### Format of the Priority/Time Tick

Time tick	Base value (ms)	Maximum time-out time (ms) that can be set in the time out ticks
0000 hex	1	255
0001 hex	2	510
0010 hex	4	1,020
0011 hex	8	2,040
0100 hex	16	4,080
0101 hex	32	8,160
0110 hex	64	16,320
0111 hex	128	32,640
1000 hex	256	65,280
1001 hex	512	130,560
1010 hex	1,024	261,120
1011 hex	2,048	522,240
1100 hex	4,096	1,044,480
1101 hex	8,192	2,088,960
1110 hex	16,389	4,177,920
1111 hex	32,768	8,355,840