

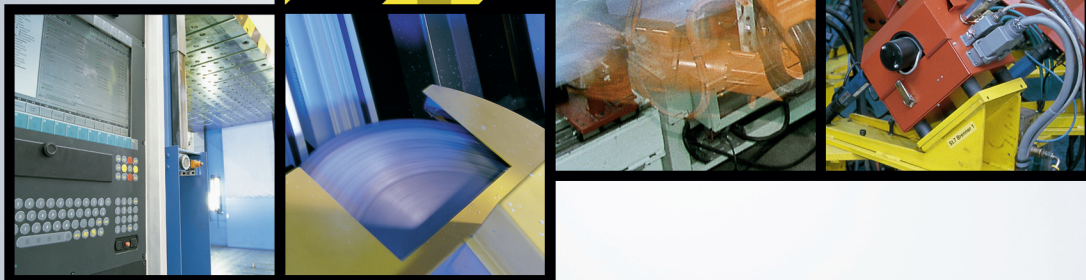
Manual | EN

TX1000

TwinCAT 2 | ADS Flash



TwinCAT 2 | Connectivity



1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.

We reserve the right to revise and change the documentation at any time and without prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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Patent Pending

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EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
with corresponding applications or registrations in various other countries.

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1.2 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation and drive engineering who are familiar with the applicable national standards.

Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

DANGER

Serious risk of injury!

Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.

WARNING

Risk of injury!

Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.

CAUTION

Personal injuries!

Failure to follow the safety instructions associated with this symbol can lead to injuries to persons.

NOTE

Damage to the environment or devices

Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.



Tip or pointer

This symbol indicates information that contributes to better understanding.

1.3 Notes on information security

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To stay informed about information security for Beckhoff products, subscribe to the RSS feed at <https://www.beckhoff.com/secinfo>.

2 Sample

Introduction

The following sample shows how to establish a communication between TwinCAT and Flash.

Prerequisites

Software

Microsoft Windows 2000/XP/2003/CE

TwinCAT PLC (version 2.10 or higher)

Macromedia (Adobe) Flash (version 8 or higher)

(If necessary) Microsoft Visual Studio (version 7.1 (".NET 2003") or higher)

Working knowledge

Programming TwinCAT PLC-Control

Communication via ADS

Creating Flash-Animations

Programming ASP and/or .NET

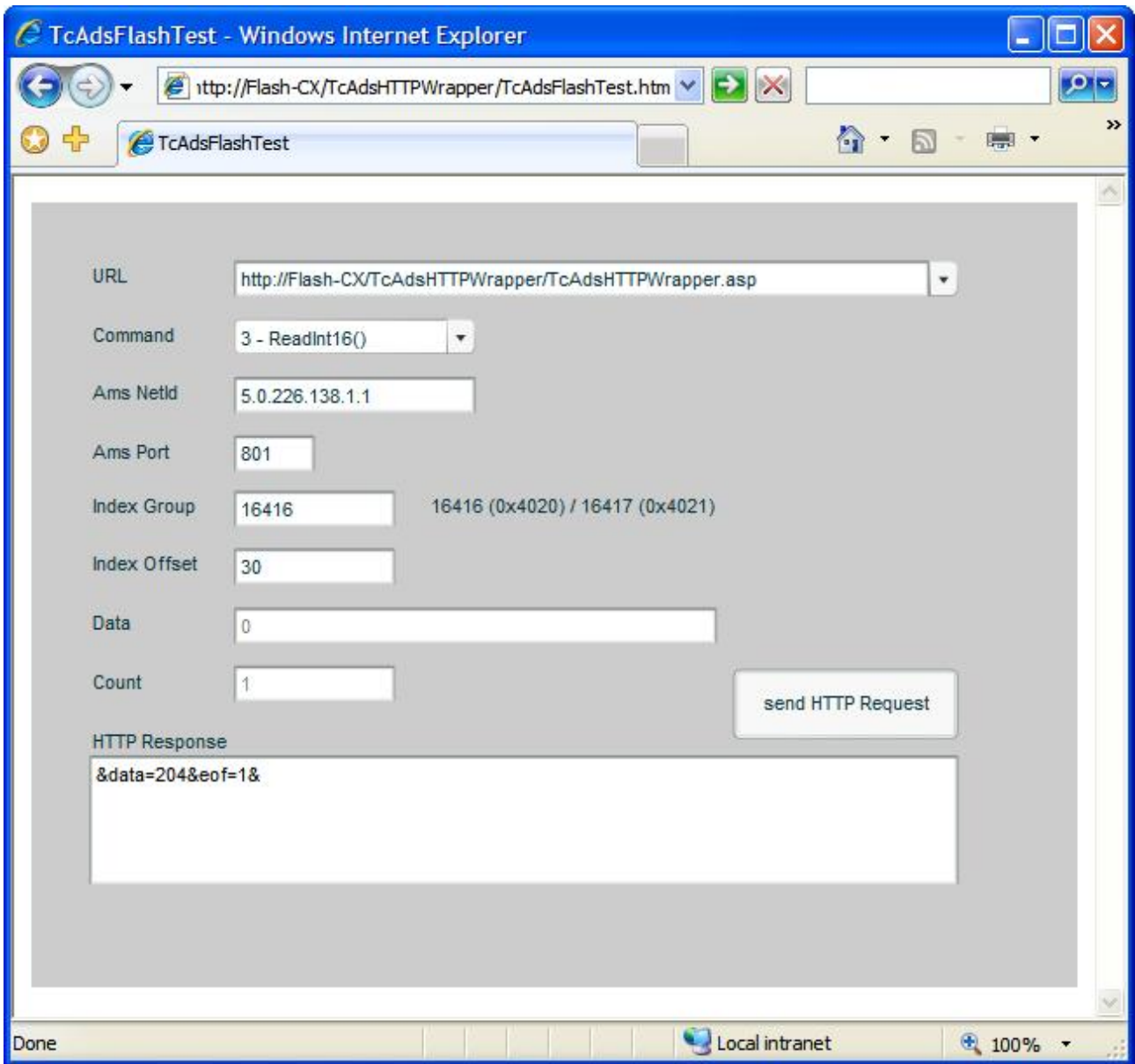
Installing ASP/ASP.NET applications on IIS (Internet Information Service) (version 5 or higher) and/or ASP applications on Windows CE (version 4.2 or higher)

Testing the ASP(X)-page



It is not possible to view Flash pages in the Internet Explorer of a Beckhoff CX1000 system with Windows CE. These systems can only work a server for those pages.

For simple testing you can use the attached testing program or the Flash testing application. With these tools the corresponding HTTP requests can be invoked. You can insert the necessary parameters in the dialog. If an error occurs, it will be displayed in the status bar. A correct response will be displayed in the text field 'HTTP-Response'.



Functioning

The ASP(X) pages can perform ADS commands. They are invoked via a HTTP-POST method. Multiple parameters were added to this request to submit which ADS command should be performed (with which values). The response consists of a string instead of a HTML page. This string contains the requested values and possible errors.

Information:

An alternative way of solving this problem would be the usage of the TwinCAT Ads-WebService. At the time when this documentation was created the Flash-WebService implementation has had an error in its memory management. This error caused a stop of the communication after a few days of running. Furthermore, the way of communication mentioned in this documentation is much faster than via SOAP, because the structure of the protocol is simpler. This can be noticed especially on low-performance systems (e.g., PDA's).

The following examples are made with the Flash testing application. The ASP page and the PLC are installed on a Beckhoff CX1000 system (with Windows CE).

Example 1 (Reading of INT16 values):

HTTP-Request

```
POST /TcAdsHTTPWrapper/TcAdsHTTPWrapper.asp HTTP/1.1
Accept: */*
x-flash-version: 8,0,22,0
Content-Type: application/x-www-form-urlencoded
Content-Length: 81
UA-CPU: x86
Accept-Encoding: gzip, deflate
User-Agent: (...)
Host: (...)
Connection: Keep-Alive
Cache-Control: no-cache

IndexOffset=30&IndexGroup=16416&Port=801&AmsNetId=5%2E0%2E226%2E138%2E1%2E1&Cmd=3
```

The following parameters are submitted to the ASP page:

'*IndexGroup*' & '*IndexOffset*' : Describe the memory address of the value (in this case byte 30)

'*AmsNetId*' & '*Port*' : Indicates the PLC and its runtime system [Dots ('.') may be used as well as '%2E'].

'*Cmd*' : Indicates the number of the method to perform (in this case '3' for 'reading an INT16 value')

HTTP-Response

```
HTTP/1.0 200 OK
Date: (...)
Server: Microsoft-WinCE/5.0
Expires: (...)
Content-Type: application/x-www-form-urlencoded
Connection: keep-alive
Content-Length: 16

&data=198&eof=1&
```

As mentioned above only a string is returned. It is formatted like it is in Flash, so the passing of this string is simple.

'&' : Separator

'eof=1' : Termination

'data' : Describes the value of the variable to read

Example 2 (Writing of INT16 values):

HTTP-Request

```
POST /TcAdsHTTPWrapper/TcAdsHTTPWrapper.asp HTTP/1.1
Accept: */*
x-flash-version: 8,0,22,0
Content-Type: application/x-www-form-urlencoded
Content-Length: 90
UA-CPU: x86
Accept-Encoding: gzip, deflate
User-Agent: (...)
Host: (...)
Connection: Keep-Alive
Cache-Control: no-cache

Data=123&IndexOffset=30&IndexGroup=16416&Port=801&AmsNetId=5%2E0%2E226%2E138%2E1%2E1&Cmd=7
```

'Data' : Describes the value to write

HTTP-Response

```
HTTP/1.0 200 OK
Date: (...)
Server: Microsoft-WinCE/5.0
Expires: (...)
Content-Type: application/x-www-form-urlencoded
Connection: keep-alive
Content-Length: 7

&eof=1&
```

Example 3 (Reading of BOOL arrays):

HTTP-Request

```
POST /TcAdsHTTPWrapper/TcAdsHTTPWrapper.asp HTTP/1.1
Accept: */*
x-flash-version: 8,0,22,0
Content-Type: application/x-www-form-urlencoded
Content-Length: 89
UA-CPU: x86
Accept-Encoding: gzip, deflate
User-Agent: (...)
Host: (...)
Connection: Keep-Alive
Cache-Control: no-cache

Count=3&IndexOffset=30&IndexGroup=16416&Port=801&AmsNetId=5%2E0%2E226%2E138%2E1%2E1&Cmd=2
```

'Count' : Indicates the number of array-elements

HTTP-Response

```
HTTP/1.0 200 OK
Date: (...)
Server: Microsoft-WinCE/5.0
Expires: (...)
Content-Type: application/x-www-form-urlencoded
Connection: keep-alive
Content-Length: 19

&data=1|0|1|&eof=1&
```

'|' : Separator for the single values of the array

Implementation into Flash

Example 1 can be realized by the following ActionScript:

At first the initialising variables must be set up:

```
var URL          : String   = "";
var HTTPCommand  : String   = "";
var Cmd          : Number   = 0;
var AmsNetId    : String   = "";
var Port        : Number   = 0;
var IndexGroup  : Number   = 0;
var IndexOffset : Number   = 0;
var Data        : Number   = 0;
var HTTPResponseData : String = "";
var Request     : LoadVars = new LoadVars();
var Response    : LoadVars = new LoadVars();
var submitListener : Object = new Object();
```

With the following operation the result is salvaged:

```
Response.onData = function(raw)
{
    if (raw == undefined)
    {
        HTTPResponseData = "Error";
    }
    else
    {
        HTTPResponseData = unescape(raw);
    }
}
```

Now the necessary values must be filled in:

```
URL          = "http://(...)/TcAdsHTTPWrapper/TcAdsHTTPWrapper.asp";
HTTPCommand  = "POST";
```

This shows how to attach the parameters to the HTTP request:

```
Request.Cmd          = 3;
Request.AmsNetId    = "5.0.226.138.1.1";
Request.Port        = 801
Request.IndexGroup  = 16416
Request.IndexOffset = 30
```

With the following method call the communication is started:

```
Request.sendAndLoad(URL, Response, HTTPCommand);
```

The result can be found in the variable "HTTPResponseData".

Project files

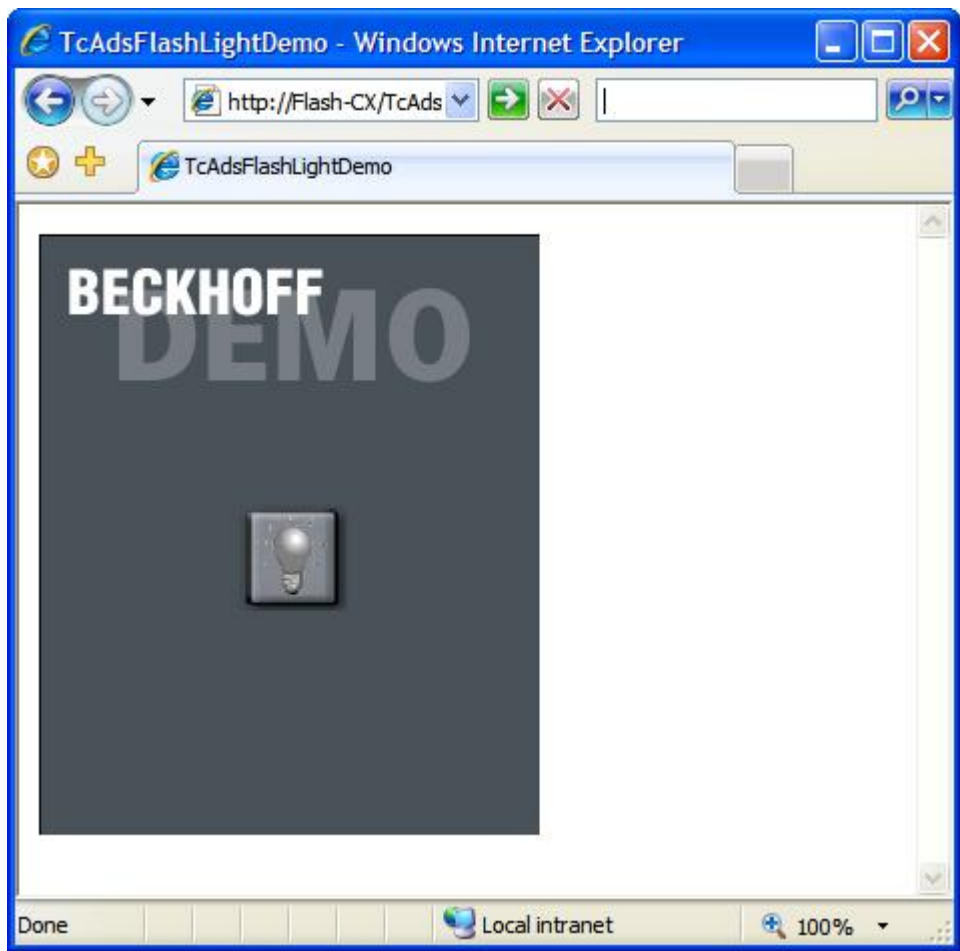
Two different possibilities are below-mentioned here.

The first is the ASP.NET application. This is only eligible for servers who support ASPX applications. You must compile this application first and add it to the IIS.

The second is the ASP page, which can be used for servers who do not support ASPX applications (.NET Compact Framework V1.1).
 This page can be copied directly to the corresponding web folder (e.g. 'hard disk\www' on Windows CE).

Project type	Project files
ASP application	https://infosys.beckhoff.com/content/1033/tcsample_flash/Resources/12492038795/.zip
ASP.NET application (for .NET-Framework 1.1)	https://infosys.beckhoff.com/content/1033/tcsample_flash/Resources/12492040203/.zip
C# testing program	https://infosys.beckhoff.com/content/1033/tcsample_flash/Resources/12492041611/.zip
Flash testing application	https://infosys.beckhoff.com/content/1033/tcsample_flash/Resources/12492043019/.zip
Light demo	https://infosys.beckhoff.com/content/1033/tcsample_flash/Resources/12492044427/.zip

Light demo



3 ADS Return Codes

Grouping of error codes:

Global error codes: [ADS Return Codes \[▶ 12\]](#)... (0x9811_0000 ...)

Router error codes: [ADS Return Codes \[▶ 12\]](#)... (0x9811_0500 ...)

General ADS errors: [ADS Return Codes \[▶ 13\]](#)... (0x9811_0700 ...)

RTime error codes: [ADS Return Codes \[▶ 14\]](#)... (0x9811_1000 ...)

Global error codes

Hex	Dec	HRESULT	Name	Description
0x0	0	0x98110000	ERR_NOERROR	No error.
0x1	1	0x98110001	ERR_INTERNAL	Internal error.
0x2	2	0x98110002	ERR_NORTIME	No real time.
0x3	3	0x98110003	ERR_ALLOCLOCKEDMEM	Allocation locked – memory error.
0x4	4	0x98110004	ERR_INSERTMAILBOX	Mailbox full – the ADS message could not be sent. Reducing the number of ADS messages per cycle will help.
0x5	5	0x98110005	ERR_WRONGRECEIVEHMSG	Wrong HMSG.
0x6	6	0x98110006	ERR_TARGETPORTNOTFOUND	Target port not found – ADS server is not started or is not reachable.
0x7	7	0x98110007	ERR_TARGETMACHINENOTFOUND	Target computer not found – AMS route was not found.
0x8	8	0x98110008	ERR_UNKNOWNCMDID	Unknown command ID.
0x9	9	0x98110009	ERR_BADTASKID	Invalid task ID.
0xA	10	0x9811000A	ERR_NOIO	No IO.
0xB	11	0x9811000B	ERR_UNKNOWNAMSCMD	Unknown AMS command.
0xC	12	0x9811000C	ERR_WIN32ERROR	Win32 error.
0xD	13	0x9811000D	ERR_PORTNOTCONNECTED	Port not connected.
0xE	14	0x9811000E	ERR_INVALIDAMSLENGTH	Invalid AMS length.
0xF	15	0x9811000F	ERR_INVALIDAMSNETID	Invalid AMS Net ID.
0x10	16	0x98110010	ERR_LOWINSTLEVEL	Installation level is too low –TwinCAT 2 license error.
0x11	17	0x98110011	ERR_NODEBUGINTAVAILABLE	No debugging available.
0x12	18	0x98110012	ERR_PORTDISABLED	Port disabled – TwinCAT system service not started.
0x13	19	0x98110013	ERR_PORTALREADYCONNECTED	Port already connected.
0x14	20	0x98110014	ERR_AMSSYNC_W32ERROR	AMS Sync Win32 error.
0x15	21	0x98110015	ERR_AMSSYNC_TIMEOUT	AMS Sync Timeout.
0x16	22	0x98110016	ERR_AMSSYNC_AMSERROR	AMS Sync error.
0x17	23	0x98110017	ERR_AMSSYNC_NOINDEXINMAP	No index map for AMS Sync available.
0x18	24	0x98110018	ERR_INVALIDAMSSPORT	Invalid AMS port.
0x19	25	0x98110019	ERR_NOMEMORY	No memory.
0x1A	26	0x9811001A	ERR_TCPSEND	TCP send error.
0x1B	27	0x9811001B	ERR_HOSTUNREACHABLE	Host unreachable.
0x1C	28	0x9811001C	ERR_INVALIDAMSFRAGMENT	Invalid AMS fragment.
0x1D	29	0x9811001D	ERR_TLSEND	TLS send error – secure ADS connection failed.
0x1E	30	0x9811001E	ERR_ACCESSDENIED	Access denied – secure ADS access denied.

Router error codes

Hex	Dec	HRESULT	Name	Description
0x500	1280	0x98110500	ROUTERERR_NOLOCKEDMEMORY	Locked memory cannot be allocated.
0x501	1281	0x98110501	ROUTERERR_RESIZEMEMORY	The router memory size could not be changed.
0x502	1282	0x98110502	ROUTERERR_MAILBOXFULL	The mailbox has reached the maximum number of possible messages.
0x503	1283	0x98110503	ROUTERERR_DEBUGBOXFULL	The Debug mailbox has reached the maximum number of possible messages.
0x504	1284	0x98110504	ROUTERERR_UNKNOWNPORTTYPE	The port type is unknown.
0x505	1285	0x98110505	ROUTERERR_NOTINITIALIZED	The router is not initialized.
0x506	1286	0x98110506	ROUTERERR_PORTALREADYINUSE	The port number is already assigned.

Hex	Dec	HRESULT	Name	Description
0x507	1287	0x98110507	ROUTERERR_NOTREGISTERED	The port is not registered.
0x508	1288	0x98110508	ROUTERERR_NOMOREQUEUES	The maximum number of ports has been reached.
0x509	1289	0x98110509	ROUTERERR_INVALIDPORT	The port is invalid.
0x50A	1290	0x9811050A	ROUTERERR_NOTACTIVATED	The router is not active.
0x50B	1291	0x9811050B	ROUTERERR_FRAGMENTBOXFULL	The mailbox has reached the maximum number for fragmented messages.
0x50C	1292	0x9811050C	ROUTERERR_FRAGMENTTIMEOUT	A fragment timeout has occurred.
0x50D	1293	0x9811050D	ROUTERERR_TOBEREMOVED	The port is removed.

General ADS error codes

Hex	Dec	HRESULT	Name	Description
0x700	1792	0x98110700	ADSERR_DEVICE_ERROR	General device error.
0x701	1793	0x98110701	ADSERR_DEVICE_SRVNOTSUPP	Service is not supported by the server.
0x702	1794	0x98110702	ADSERR_DEVICE_INVALIDGRP	Invalid index group.
0x703	1795	0x98110703	ADSERR_DEVICE_INVALIDOFFSET	Invalid index offset.
0x704	1796	0x98110704	ADSERR_DEVICE_INVALIDACCESS	Reading or writing not permitted.
0x705	1797	0x98110705	ADSERR_DEVICE_INVALIDSIZE	Parameter size not correct.
0x706	1798	0x98110706	ADSERR_DEVICE_INVALIDDATA	Invalid data values.
0x707	1799	0x98110707	ADSERR_DEVICE_NOTREADY	Device is not ready to operate.
0x708	1800	0x98110708	ADSERR_DEVICE_BUSY	Device is busy.
0x709	1801	0x98110709	ADSERR_DEVICE_INVALIDCONTEXT	Invalid operating system context. This can result from use of ADS blocks in different tasks. It may be possible to resolve this through multitasking synchronization in the PLC.
0x70A	1802	0x9811070A	ADSERR_DEVICE_NOMEMORY	Insufficient memory.
0x70B	1803	0x9811070B	ADSERR_DEVICE_INVALIDPARM	Invalid parameter values.
0x70C	1804	0x9811070C	ADSERR_DEVICE_NOTFOUND	Not found (files, ...).
0x70D	1805	0x9811070D	ADSERR_DEVICE_SYNTAX	Syntax error in file or command.
0x70E	1806	0x9811070E	ADSERR_DEVICE_INCOMPATIBLE	Objects do not match.
0x70F	1807	0x9811070F	ADSERR_DEVICE_EXISTS	Object already exists.
0x710	1808	0x98110710	ADSERR_DEVICE_SYMBOLNOTFOUND	Symbol not found.
0x711	1809	0x98110711	ADSERR_DEVICE_SYMBOLVERSIONINVALID	Invalid symbol version. This can occur due to an online change. Create a new handle.
0x712	1810	0x98110712	ADSERR_DEVICE_INVALIDSTATE	Device (server) is in invalid state.
0x713	1811	0x98110713	ADSERR_DEVICE_TRANSMODENOTSUPP	AdsTransMode not supported.
0x714	1812	0x98110714	ADSERR_DEVICE_NOTIFYHNDINVALID	Notification handle is invalid.
0x715	1813	0x98110715	ADSERR_DEVICE_CLIENTUNKNOWN	Notification client not registered.
0x716	1814	0x98110716	ADSERR_DEVICE_NOMOREHDL	No further handle available.
0x717	1815	0x98110717	ADSERR_DEVICE_INVALIDWATCHSIZE	Notification size too large.
0x718	1816	0x98110718	ADSERR_DEVICE_NOTINIT	Device not initialized.
0x719	1817	0x98110719	ADSERR_DEVICE_TIMEOUT	Device has a timeout.
0x71A	1818	0x9811071A	ADSERR_DEVICE_NOINTERFACE	Interface query failed.
0x71B	1819	0x9811071B	ADSERR_DEVICE_INVALIDINTERFACE	Wrong interface requested.
0x71C	1820	0x9811071C	ADSERR_DEVICE_INVALIDCLSID	Class ID is invalid.
0x71D	1821	0x9811071D	ADSERR_DEVICE_INVALIDOBJID	Object ID is invalid.
0x71E	1822	0x9811071E	ADSERR_DEVICE_PENDING	Request pending.
0x71F	1823	0x9811071F	ADSERR_DEVICE_ABORTED	Request is aborted.
0x720	1824	0x98110720	ADSERR_DEVICE_WARNING	Signal warning.
0x721	1825	0x98110721	ADSERR_DEVICE_INVALIDARRAYIDX	Invalid array index.
0x722	1826	0x98110722	ADSERR_DEVICE_SYMBOLNOTACTIVE	Symbol not active.
0x723	1827	0x98110723	ADSERR_DEVICE_ACCESSDENIED	Access denied.
0x724	1828	0x98110724	ADSERR_DEVICE_LICENSENOTFOUND	Missing license.
0x725	1829	0x98110725	ADSERR_DEVICE_LICENSEEXPIRED	License expired.
0x726	1830	0x98110726	ADSERR_DEVICE_LICENSEEXCEEDED	License exceeded.
0x727	1831	0x98110727	ADSERR_DEVICE_LICENSEINVALID	Invalid license.
0x728	1832	0x98110728	ADSERR_DEVICE_LICENSESYSTEMID	License problem: System ID is invalid.
0x729	1833	0x98110729	ADSERR_DEVICE_LICENSENOTIMELIMIT	License not limited in time.
0x72A	1834	0x9811072A	ADSERR_DEVICE_LICENSEFUTUREISSUE	Licensing problem: time in the future.
0x72B	1835	0x9811072B	ADSERR_DEVICE_LICENSESETIMETOLONG	License period too long.

Hex	Dec	HRESULT	Name	Description
0x72C	1836	0x9811072C	ADSERR_DEVICE_EXCEPTION	Exception at system startup.
0x72D	1837	0x9811072D	ADSERR_DEVICE_LICENSEDUPLICATED	License file read twice.
0x72E	1838	0x9811072E	ADSERR_DEVICE_SIGNATUREINVALID	Invalid signature.
0x72F	1839	0x9811072F	ADSERR_DEVICE_CERTIFICATEINVALID	Invalid certificate.
0x730	1840	0x98110730	ADSERR_DEVICE_LICENSEOEMNOTFOUND	Public key not known from OEM.
0x731	1841	0x98110731	ADSERR_DEVICE_LICENSERESTRICTED	License not valid for this system ID.
0x732	1842	0x98110732	ADSERR_DEVICE_LICENSEDEMODENIED	Demo license prohibited.
0x733	1843	0x98110733	ADSERR_DEVICE_INVALIDFNID	Invalid function ID.
0x734	1844	0x98110734	ADSERR_DEVICE_OUTOFRANGE	Outside the valid range.
0x735	1845	0x98110735	ADSERR_DEVICE_INVALIDALIGNMENT	Invalid alignment.
0x736	1846	0x98110736	ADSERR_DEVICE_LICENSEPLATFORM	Invalid platform level.
0x737	1847	0x98110737	ADSERR_DEVICE_FORWARD_PL	Context – forward to passive level.
0x738	1848	0x98110738	ADSERR_DEVICE_FORWARD_DL	Context – forward to dispatch level.
0x739	1849	0x98110739	ADSERR_DEVICE_FORWARD_RT	Context – forward to real time.
0x740	1856	0x98110740	ADSERR_CLIENT_ERROR	Client error.
0x741	1857	0x98110741	ADSERR_CLIENT_INVALIDPARG	Service contains an invalid parameter.
0x742	1858	0x98110742	ADSERR_CLIENT_LISTEMPTY	Polling list is empty.
0x743	1859	0x98110743	ADSERR_CLIENT_VARUSED	Var connection already in use.
0x744	1860	0x98110744	ADSERR_CLIENT_DUPLINVOKEID	The called ID is already in use.
0x745	1861	0x98110745	ADSERR_CLIENT_SYNCSTIMEOUT	Timeout has occurred – the remote terminal is not responding in the specified ADS timeout. The route setting of the remote terminal may be configured incorrectly.
0x746	1862	0x98110746	ADSERR_CLIENT_W32ERROR	Error in Win32 subsystem.
0x747	1863	0x98110747	ADSERR_CLIENT_TIMEOUTINVALID	Invalid client timeout value.
0x748	1864	0x98110748	ADSERR_CLIENT_PORTNOTOPEN	Port not open.
0x749	1865	0x98110749	ADSERR_CLIENT_NOAMSADDR	No AMS address.
0x750	1872	0x98110750	ADSERR_CLIENT_SYNCINTERNAL	Internal error in Ads sync.
0x751	1873	0x98110751	ADSERR_CLIENT_ADDHASH	Hash table overflow.
0x752	1874	0x98110752	ADSERR_CLIENT_REMOVEHASH	Key not found in the table.
0x753	1875	0x98110753	ADSERR_CLIENT_NOMORESVM	No symbols in the cache.
0x754	1876	0x98110754	ADSERR_CLIENT_SYNCRESINVALID	Invalid response received.
0x755	1877	0x98110755	ADSERR_CLIENT_SYNCPORTLOCKED	Sync Port is locked.

RTime error codes

Hex	Dec	HRESULT	Name	Description
0x1000	4096	0x98111000	RTERR_INTERNAL	Internal error in the real-time system.
0x1001	4097	0x98111001	RTERR_BADTIMERPERIODS	Timer value is not valid.
0x1002	4098	0x98111002	RTERR_INVALIDTASKPTR	Task pointer has the invalid value 0 (zero).
0x1003	4099	0x98111003	RTERR_INVALIDSTACKPTR	Stack pointer has the invalid value 0 (zero).
0x1004	4100	0x98111004	RTERR_PRIOEXISTS	The request task priority is already assigned.
0x1005	4101	0x98111005	RTERR_NOMORETCB	No free TCB (Task Control Block) available. The maximum number of TCBs is 64.
0x1006	4102	0x98111006	RTERR_NOMORESEMAS	No free semaphores available. The maximum number of semaphores is 64.
0x1007	4103	0x98111007	RTERR_NOMOREQUEUES	No free space available in the queue. The maximum number of positions in the queue is 64.
0x100D	4109	0x9811100D	RTERR_EXTIRQALREADYDEF	An external synchronization interrupt is already applied.
0x100E	4110	0x9811100E	RTERR_EXTIRQNOTDEF	No external sync interrupt applied.
0x100F	4111	0x9811100F	RTERR_EXTIRQINSTALLFAILED	Application of the external synchronization interrupt has failed.
0x1010	4112	0x98111010	RTERR_IRQNOTLESSOREQUAL	Call of a service function in the wrong context
0x1017	4119	0x98111017	RTERR_VMXNOTSUPPORTED	Intel VT-x extension is not supported.
0x1018	4120	0x98111018	RTERR_VMXDISABLED	Intel VT-x extension is not enabled in the BIOS.
0x1019	4121	0x98111019	RTERR_VMXCONTROLSMISSING	Missing function in Intel VT-x extension.
0x101A	4122	0x9811101A	RTERR_VMXENABLEFAILS	Activation of Intel VT-x fails.

Specific positive HRESULT Return Codes:

HRESULT	Name	Description
0x0000_0000	S_OK	No error.
0x0000_0001	S_FALSE	No error. Example: successful processing, but with a negative or incomplete result.
0x0000_0203	S_PENDING	No error. Example: successful processing, but no result is available yet.
0x0000_0256	S_WATCHDOG_TIMEOUT	No error. Example: successful processing, but a timeout occurred.

TCP Winsock error codes

Hex	Dec	Name	Description
0x274C	10060	WSAETIMEDOUT	A connection timeout has occurred - error while establishing the connection, because the remote terminal did not respond properly after a certain period of time, or the established connection could not be maintained because the connected host did not respond.
0x274D	10061	WSAECONNREFUSED	Connection refused - no connection could be established because the target computer has explicitly rejected it. This error usually results from an attempt to connect to a service that is inactive on the external host, that is, a service for which no server application is running.
0x2751	10065	WSAEHOSTUNREACH	No route to host - a socket operation referred to an unavailable host.
More Winsock error codes: Win32 error codes			

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