

21 CO IP Viewer 909510

Application program usage

Product family: Communication

Product type: Interfaces

Manufacturer: Siemens

Name: IP Viewer N151

Order no.: 5WG1 151-1AB01

Functional description

- The IP Viewer N151 provides the following functions:
- This device incorporates a web server for operating and monitoring KNX/EIB systems.
 - It can display up to 5 operating pages via a standard browser. On this are provided to 40 functions.
 - A web configuration page allows you to edit the display in a number of languages.
 - It provides an interface to KNX installations via data networks using the Internet protocol (IP). At the same time, this device provides communication from KNX devices with PCs or other data processing devices (EIBnet/IP Tunneling). Client software products, such as ETS 3, which are based on the EIBnet/IP tunnel protocol, can set up connections to the IP Viewer N151.
 - Communication with a visualization software via IP network (object server connection) is possible (See supported software).

The settings for the device will be programmed by ETS into the default settings. The data types of the 40 available functions are defined and basic data on the device made. The following function types can be selected:

- No function
- Switching with feedback
- Switching without feedback
- Feedback
- Presence
- Dimming
- Blinds/slats
- 1 Byte relative (0...100%)
- 1 Byte value (0...255)
- 2 Byte Floating Point (EIS 5 / DPT 9.xxx)
- 4 Byte Floating Point (EIS 9 / DPT 14.xxx)
- 2 Byte Counter (EIS 10 / DPT 7.001)
- 4 Byte Counter (EIS 11 / DPT 12.001)
- Scene recall/program 1 bit
- Scene recall/program 8 bit

The 40 functions provided supply up to 80 communication objects for connection to the group addresses. The following are also carried out with ETS:

- The assignment of the group addresses to the communications objects
- The configuration of the IP Network parameters
- Parameter setting of the access protection of the Web pages
- Parameter setting of an initialization of the user-defined settings after an ETS download
- Parameter setting of a read request of the object values after a restart

Parameters

General

Parameter	Setting
Device name (max. 30 char)	IP_Viewer_N151
Using this parameter the device can be given a name that can be used to make it easy to find in the device search via the network and in the visualization. Punctuation marks (e.g., ., /) and special characters are not allowed.	
IP Address assignment	by DHCP Server manual input
The type of IP address assignment is established here. DHCP is preassigned by default for an automatic address assignment by a DHCP service. The IP address assigned by the DHCP is used until a reset or line voltage is restored. If "manual entry" is selected, two further parameters, "IP Config 1" and "IP Config 2" are added for the manual entry of the IP address, subnet mask and the standard gateway. When the IP Viewer is used as a visualization server, a fixed IP address is advisable, since the server can always be reached under this assigned address.	

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Parameter	Setting
IP Boot option	Use DHCP always use fix IP, if DHCP server is not available
<p>This parameter is visible only when the DHCP use has been selected in the IP address assignment.</p> <p>This parameter can be used to establish that DHCP will always be used (default setting) or the fixed IP address can be used when, after a certain time, no IP address can be received by a DHCP service. The time is defined under the "Details" parameter.</p>	
Send read requests to update object values after restart	yes no
<p>This setting is used to decide whether after a restart the IP Viewer should retrieve the values of the 40 functions or 80 communications objects from the bus.</p>	
User Name (max. 4 characters)	N151
<p>The WEB configuration page, the visualization page and the Upgrade Function of the IP Viewer can be protected by entering a user name. A maximum of 4 alphanumeric characters is possible. The same case must be used for these characters later when entering the user name to access the Web pages.</p>	
Password (max. 4 characters)	1234
<p>The WEB configuration page, the visualization page and the Upgrade Function of the IP Viewer can be protected by entering a password. A maximum of 4 alphanumeric characters can be entered. The same case must be used for these characters later when entering the password to access the Web pages.</p>	
Initialize webview during startup	yes no
<p>The user-defined settings that can be carried out via the WEB configuration page can be initialized in the ETS download.</p>	

IP Config

These tabs *IP Konfig 1* and *IP Konfig 2* are visible only if *manual entry* of the IP address of the IP Viewer was set in the IP address assignment.

IP Config 1

IP Address

Byte 1: 0

Byte 2: 0

Byte 3: 0

Byte 4: 0

IP Subnet mask

Byte 1: 0

Byte 2: 0

Byte 3: 0

Byte 4: 0

Parameter	Setting
IP Address	
Byte 1	0
Byte 2	0
Byte 3	0
Byte 4	0
<p>With manual IP address assignment, the IP address of the IP Viewer is fixed here.</p> <p>The value set at the factory for the IP address is 0.0.0.0. This preassignment must be replaced by a valid IP address, e.g. 144.145.134.25.</p> <p>If a DHCP service is set, this address will be permanently overwritten by the address given by the DHCP Server.</p> <p>The four Bytes of the IP address are set individually, the value range for each Byte being 0...255.</p>	
IP Subnet Mask	
Byte 1	0
Byte 2	0
Byte 3	0
Byte 4	0
<p>With manual IP address assignment, the IP subnet mask of the IP Viewer is set here.</p> <p>The value set at the factory for the IP subnet mask is 0.0.0.0. This preassignment must be replaced by a valid IP subnet mask. Valid subnet masks are, e.g., 255.255.255.0 or 255.255.240.0.</p> <p>If a DHCP service is set, this address will be permanently overwritten by the address assigned by the DHCP server.</p> <p>The four Bytes of the IP subnet mask are set individually, the value range for each Byte being 0...255.</p>	

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Parameter	Setting
IP Standard Gateway	
Byte 1	0
Byte 2	0
Byte 3	0
Byte 4	0

With manual IP address assignment, the IP address of the IP Standard Gateway is set here.

The value set at the factor is **0.0.0.0**. This preassignment must be replaced by a valid IP address.

The four Bytes of the IP Standard Gateway are set individually, the value range for each Byte being 0...255.

The Standard Gateway is used to transmit IP telegrams that are addressed to a computer outside the local network.

If a DHCP service is set, this address will be permanently overwritten by the address assigned by the DHCP server.

If the DHCP server does not transmit an address for a gateway, it is assumed that no gateway is to be used.

If the device is to be parameterized without a Standard Gateway, the preset (invalid) address should be used (**0.0.0.0**).

Details

Details	
Communication Timeout	20 seconds
DHCP timeout	1 minute

Parameter	Setting
Communication Timeout	1 second 5 seconds 10 seconds 15 seconds 20 seconds 30 seconds 1 minute
This parameter determines the time within which the IP Viewer should receive a response from an IP communication partner to a sent message.	
If the response has not come back within the Communication Timeout, the message is resent and, after a repeated attempt, the connection is terminated and the message rejected.	
DHCP timeout	5 seconds 30 seconds 1 minute 2 minutes
This parameter stipulates how long the IP Viewer should wait for the response from a DHCP service. This time is particularly important when at the end of this time the IP Viewer is to use a manually entered IP address.	

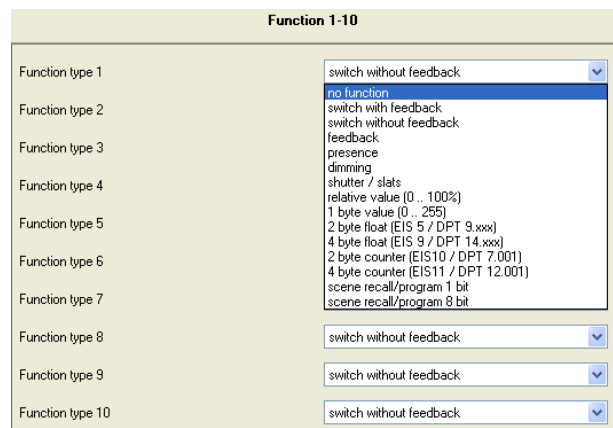
Communication objects

Number of group addresses: 83
Number of associations: 83

Function

The 40 functions can be set via the 4 parameters "Function 1-10" through "Function 31-40", 10 functions per parameter.

For each function the function type can be selected from a pull-down list.



The following communication objects can be selected:

Function 1				
Obj	Object name	Function	Type	Flag
No function				
Function 2				
Obj	Object name	Function	Type	Flag
0	Switching On/Off	Switching with feedback	1 Bit	CWTU
1	Feedback	Switching with feedback	1 Bit	CWU
Function 3				
Obj	Object name	Function	Type	Flag
0	Switching On/Off	Switching without feedback	1 Bit	CRWTU
Function 4				
Obj	Object name	Function	Type	Flag
0	Feedback	Feedback	1 Bit	CW

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Function 5				
Obj	Object name	Function	Type	Flag
0	Presence	Presence	1 Bit	CRWTU
Function 6				
Obj	Object name	Function	Type	Flag
0	Dimming, On/Off	Dimming	1 Bit	CWTU
1	Dimming, brighter/darker	Dimming	4 Bit	CWT
Function 7				
Obj	Object name	Function	Type	Flag
0	Slat, open/close	Blind / Slat	1 Bit	CWT
1	Blind, up/down	Blind / Slat	1 Bit	CWT
Function 8				
Obj	Object name	Function	Type	Flag
0	Value relative (0...100%)	1 Byte relative (0...100%)	1 Byte	CRWTU
Function 9				
Obj	Object name	Function	Type	Flag
0	Value (0...255)	1 Byte value (0...255)	1 Byte	CRWTU
Function 10				
Obj	Object name	Function	Type	Flag
0	2 Byte float	2 Byte float (EIS 5 / DPT 9.xxx)	2 Byte	CRWTU
Function 11				
Obj	Object name	Function	Type	Flag
0	4 Byte float	4 Byte float (EIS 9 / DPT 14.xxx)	4 Byte	CRWTU
Function 12				
Obj	Object name	Function	Type	Flag
0	2 Byte counter	2 Byte counter (EIS 10 / DPT 7.001)	2 Byte	CRWTU
Function 13				
Obj	Object name	Function	Type	Flag
0	4 Byte counter	4 Byte counter (EIS 11 / DPT 12.001)	4 Byte	CRWTU
Function 14				
Obj	Object name	Function	Type	Flag
0	Scene recall	Scene recall / program 1 bit	1 Bit	CWT
1	Scene program	Scene recall / program 1 bit	1 Bit	CWT

Function 15				
Obj	Object name	Function	Type	Flag
0	Scene recall / program	Scene recall / program 8 bit	1 Byte	CWT

Setting the scene number to be called or to be programmed is carried out exclusively via the web configuration page, in the field "parameter".

Overview

Note:

The view of the objects can be designed individually, i.e., this view can vary.

Number	Name	Object Func...	Length	C	R	W	T	U
2	switch command	Function 2	1 bit	C	-	W	T	U
3	feedback	Function 2	1 bit	C	R	W	T	U
4	switch command	Function 3	1 bit	C	R	W	T	U
6	feedback	Function 4	1 bit	C	R	W	T	U
8	presence	Function 5	1 bit	C	R	W	T	U
10	dimming On/Off	Function 6	1 bit	C	-	W	T	-
11	dimming	Function 6	4 bit	C	-	W	T	-
12	blind	Function 7	1 bit	C	-	W	T	-
13	shutter	Function 7	1 bit	C	-	W	T	-
14	value relative (0 .. 100%)	Function 8	1 Byte	C	R	W	T	U
16	value (0 .. 255)	Function 9	1 Byte	C	R	W	T	U
18	2 byte float	Function 10	2 Byte	C	R	W	T	U
20	4 byte float	Function 11	4 Byte	C	R	W	T	U
22	2 byte counter	Function 12	2 Byte	C	R	W	T	U
24	4 byte counter	Function 13	4 Byte	C	R	W	T	U
26	scene call/program	Function 14	1 bit	C	-	W	T	-
27	scene program	Function 14	1 bit	C	-	W	T	-
28	scene call/program	Function 15	1 Byte	C	-	W	T	-

Configuration and operation

After the IP Viewer has been loaded with the ETS - setting, all of the configurations set, all selected functions connected to the group addresses, all the defined function types can be displayed in the pre-set state on a WEB configuration page. The view type and the assignment of the functions to the individual tabs, in addition to some configuration settings, can be parameterized via the WEB configuration page,

This WEB configuration page can be accessed via the IP address that was assigned in the ETS - setting:

<http://<ip-adress>/config.htm>

The address assignment was carried out via a DHCP - service, the allocated IP - address can be seen in the ETS Connection Manager, in the communication parameters.

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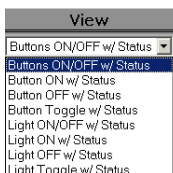
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No.	<i>Communication object number</i>
Address	<i>Linked group addresses</i>
Type	<i>Function type configured with the ETS</i>
Label	<i>Label text of this function</i>
View	<i>Display of this function</i>
Page	<i>Assignment to the page (tab) on which this function should be displayed (all 40 functions can be displayed on a side – as of the 10th function a scrollbar is displayed)</i>
Parameter	<i>Additional parameter for the corresponding function</i>

View

Several variants are available for display for each basic data type (ETS configuration). In the "View" column a view type can be individually selected according to the set function type. A pull-down window provides a convenient selection method.

Function type: Switching with status



The user can choose here whether it should be an ON/OFF button or just On, or just Off or a toggle function.

If a "Button ON/OFF w/Status" Function is selected, the following design is displayed:



If a "Button ON w/Status" Function is selected, the following design is displayed:



If a "Button OFF w/Status" Function and a "Button Toggle w/Status" Function is selected, the following design is displayed:



If a "Light ON/OFF w/Status" Function is selected, the following design is displayed:



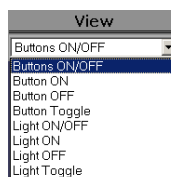
If a "Light ON w/Status" Function is selected, the following design is displayed:



If a "Light OFF w/Status" Function and a "Light Toggle w/Status" Function is selected, the following design is displayed:



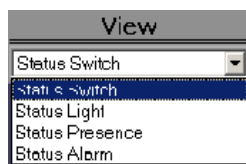
Function type: Switching without status



The user can choose here whether it should be an ON/OFF button or just On, or just Off or a toggle function.

The same designs are available as under "Switch with feedback".

Function type: Status



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The user can choose here whether it should be a Switch, Light, Presence or Alarm feedback.

If a "Status Switch" Function is selected, the following design is displayed:



If a "Status Light" Function is selected, the following design is displayed:



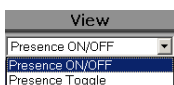
If a "Status Presence" Function is selected, the following design is displayed:



If a "Status Alarm" Function is selected, the following design is displayed:



Function type: Presence



The user can choose here whether it should be a Presence ON/OFF or a Presence toggle function.

If a "Presence ON/OFF" Function is selected, the following design is displayed:



If a "Presence Toggle" Function is selected, the following design is displayed:



Function type: Dimming



A dimmer function is shown in the following design:



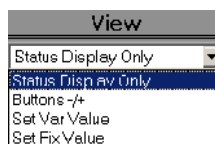
Function type: Blind/Slat



A blind or shutter function is displayed in the following design:

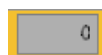


Function type: 1 Byte relative [0...100%] set and display



The user can choose here whether the value [0...100%] should be displayed as a pure display, without change option or whether the value should be adjustable.

If you select "Status Display Only" the value will be displayed without change option.



If you select "Button +/-" the value is displayed with change option. The value can be changed via a step function. The step size is thereby determined in the "Parameter" field on the WEB configuration page.



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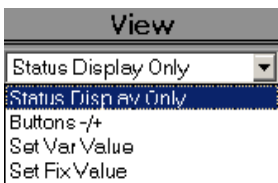
If you select "Set Var Value" the value is displayed with change option. The value can be changed via the display field. The value is sent by pressing the button.



If "Set Fix Value" is selected, the value defined on the WEB configuration page in the "Parameter" field is interpreted as a fixed value. The value is sent to the EIB/KNX Bus by pressing the key.



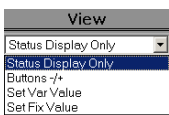
Function type: 1 Byte value [0...255] set and display



The user can choose here whether the value [0...255] should be displayed as a pure display, without any change option, or whether the value should be displayed in an adjustable manner.

The same display windows and value setters are displayed as described under Function type: 1 Byte relative [0...100%].

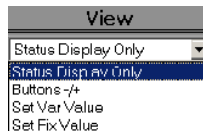
Function type: 2 Byte floating point value (EIS 5) set and display



The user can select here whether the floating-point value (EIS 5) should be displayed as a pure display, without change option, or whether the value should be displayed in an adjustable manner.

The same display windows and value setters are displayed as described under function type: 1 Byte relative [0...100%].

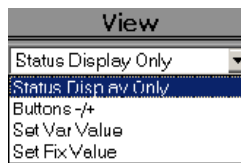
Function type: 4 Byte floating point value (EIS 9) set and display



The user can choose here whether the floating-point value (EIS 9) should be displayed as a pure display, without change option, or whether the value should be displayed in an adjustable manner.

The same display windows and value setters as described under Function type: 1 Byte relative [0...100%] are displayed.

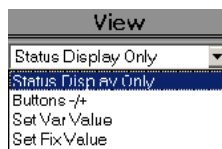
Function type: 2 Byte counter value (EIS 10) set and display



The user can choose here whether the counter value (EIS 10) should be displayed as a pure display, without change option, or whether the value should be displayed in an adjustable manner.

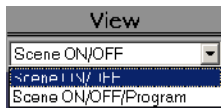
The same display windows and value setters as described under Function type: 1 Byte [0...100%] are displayed.

Function type: 4 Byte counter value (EIS 11) set and display



The user can choose here whether the counter value (EIS 11) should be displayed as a pure display, without a change option, or whether the value should be displayed in an adjustable manner.

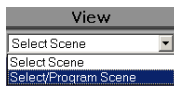
The same display windows and value setters as described under function type: 1 Byte relative [0...100%] are displayed.

21 CO IP Viewer 909510**Function type: Scene recall/program 1 bit**

Here the user can define an operating element to just call the scenes or to recall and also program the scenes.

If "Scene ON/OFF" is selected, at the recall a communication object will be set at the value 0 or 1.

If "Scene ON/OFF/Program" is selected, at the recall this communication object, after a long keypress, is set at the value 0 or 1 and sent.

**Function type: Scene recall/program 8 bit**

Here the user can define an operating element to only recall scenes or to recall scenes and to program them.

If "Select Scene" is selected, with a short keypress of the operating key, the scene number is recalled, which was entered in the "Parameter" field. This value is sent in the communication object. A value has therefore to be defined in the area of 0 to 63. For example the scene 1 is called/programmed with the value 0.

If "Select Program Scene" is selected, with a long keypress, the value for this scene is programmed.



This scene function is carried out by actors, which support 8 bit scenes.

The IP Viewer N151 does not administer any scenes of its own, it is used only for saving and calling scenes which are stored in separate scene modules or actuators.

Operation

After the completion of the configuration for the display, the WEB page can be accessed via the IP address that was assigned in the ETS configuration:

`http://<ip-address>`

The address assignment was carried out via a DHCP – service, the allocated IP - address can be seen in the ETS Connection Manager, in the communication parameters.

As already described for the WEB configuration page, the WEB view page is protected by the same user name and by the password.

The visualization page is generated automatically and presented to the user as follows:



The navigation is shown in the top line.

In principle a "Refresh" button for updating the communication objects is shown.

The 5 tabs behind it are used for grouping the individual functions.

Labeling the tabs, labeling and displaying the functions have already been described in the "Configuration" section.

Maintenance and Upgrade Function

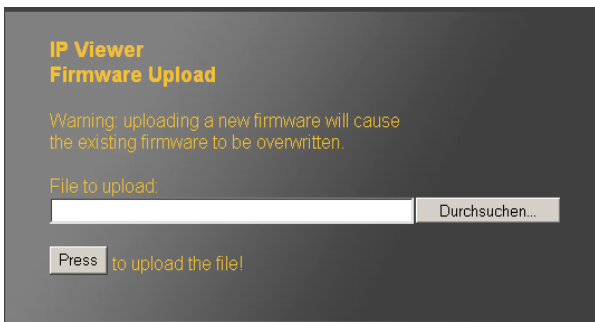
The IP Viewer N151 is equipped with a convenient way of carrying out a firmware upgrade, without the device having to be removed.

Future developments can thus be installed online without great effort.

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The Upgrade page is accessed as follows:

http://<ip-adress>/upload.htm



With the "Browse" button a dialog is opened to select the Firmware Image, e.g., UpgradeV501.bin, on a data carrier in the respective directory.

After the selection of the corresponding file, which has an extension "bin," you can load the new Firmware on the device using the "Press" button.

Once you have loaded the firmware successfully, you will receive the message: "SUCCESS – system will reboot in a few seconds".

This operation can take several seconds. Then the IP Viewer will be restarted automatically with the new firmware.

Via the WEB configuration page:
http://<ip-adress>/config.htm the new firmware version, e.g., V5.0.1, will be displayed at the top left.

Return to the as-delivered status

To return the device to the as-delivered status, the supply voltage must be switched on while the program key is pressed.

An initial reset is thus carried out and the device is once again in the as-delivered condition with the physical address: 15.15.255.

Supported Software

Below is a selection of software that is compatible with the IP Viewer N151.

Web browser

For the display of the web configuration page and the display- and operating pages a javascript enabled web browser (optimized an x86 based PC, Internet Explorer ver. 6.0 / 7.0 or Firefox ver. 2.0) necessary.

Notice:

When using other web browsers (Safari, Opera, Internet Explorer mobile, Firefox light, Netscape) operation and display of the web pages may not work properly respectively the function is not ensured.

ComBridge Studio

IPAS GmbH
Grabenstr 149 a
47057 Duisburg
[<http://www.ipas-products.com>]

ComBridge Studio is a visualization software that can use the IP Viewer N151, the IP interface N148/21, the IP Router N146 and the IP Controller N350E as interface to the EIB.

Further information can be found in the GAMMA Catalog or on the referenced Web page.

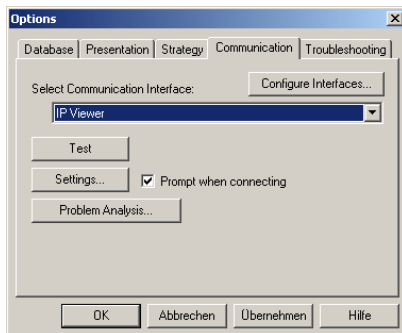
ETS3

KNX-Association
Bessenveldstraat 5
B-1831 Diegem
[<http://www.knx.org>]

An EIBnet/IP driver is available for the ETS3 from Version ETS3.0d (PatchA). When this driver is installed, the ETS3 can use the IP Viewer N151, the IP Controller N350E, the IP Router N146 and the IP interface N148/21 like a conventional serial RS232 or USB interface for communication with the Bus. This includes the download of devices via Bus and the group monitor function.

Note

If the IP interface N148/21, the IP Router N146, the IP Controller N350E or the IP Viewer N151 is chosen as the communication interface, an additional physical address must be set for an error-free operation.

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Click on Settings.



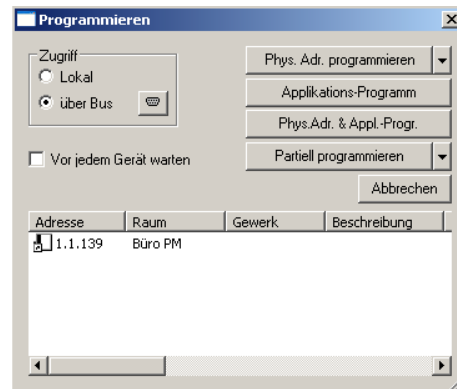
Enter an additional address in the "Physical Address" field that has not yet been used and that is in the same Line as the physical address of the IP Viewer. You can use the "Is this address free?" button to check whether the address has already been used. By selecting the "OK" button, the entered address is written in the device and used for the connection with the ETS3.

Note

The ETS3 driver does not yet currently support the Bus monitor and download functions in the local device.

Note

If the IP Viewer N151 is to be configured via the Tunneling connection, this configuration must take place via the Bus. The local setting may not be used.

**Note**

After the installation of the ETS3 driver and the release of the IP interface N148/21, the IP router N146, the IP Controller N350E or the IP Viewer N151 as communication interface, a Windows error message can appear that the "Class" is not known.

In this case the Microsoft .Net Framework should be installed, which can be downloaded from the Microsoft Update page (file size: approx. 25 MB).

Note

If you set up the IP Viewer N 151 as a communication interface, after parameter setting actuate the "KNXnet/IP Diagnose-Assistent" button. Now select as test type the setting "Manual Configuration." After the "Perform Test" has been pressed, you will receive the error message with the Unicast-Test "Test failed". This message is triggered by an error with the internal Unicast test of the ETS and can be ignored.

General Notes

- A faulty device should be sent to the relevant branch of Siemens AG.
- With any additional questions on the product, please contact our Technical Support:



+49 (0) 180 50 50-222



+49 (0) 180 50 50-223



adsupport@siemens.com



www.siemens.com/automation/support-request