



OPC Server - Siemens SPC

Installation, Configuration, Usage

User Manual

V1.2 - Modified version dated 22.03.2018

© 2018 Schille Informationssysteme GmbH / Schille Services GmbH.

All rights reserved. We reserve the right to make technical alterations. All products mentioned by name are trademarks or registered trademarks of their respective manufacturer.

1. OPC Server - Siemens SPC

What is OPC?

OPC (Open Platform Communications) is the world-wide recognized quasi-standard for communication between almost all facilities in building and security technology. Schille Informationssysteme GmbH has been a specialist for OPC technologies in the security industry for more than 15 years.

Description

The OPC server Siemens SPC is designed to communicate with Siemens SPC series intrusion detection systems. This is done via the Enhanced Datagram Protocol (EDP) using TCP / IP.

Among other things, statuses are provided via door and window contacts or alarms as data points, which are read by the OPC server and are, Can also be described.

All status changes of the SPC systems are transferred via so-called SIA events.

The OPC server only supports the connection of a control center. If several control panels are to be integrated, several instances of the OPC server are also required on one device.

Technical data

OPC Specification:	OPC DA 2.0
Compatibility:	SPC firmware 3.4; EDP Protocol Specification 2.5
Interface:	Ethernet
Protocols:	EDP über TCP/IP

Features

The following states can be read / written by the OPC server:

- Door / window contact on / off / open / closed / sabotaged
- Burglar alarm on / off / test mode
- Alarm delay on / off

1.1. User Manual OPC Server - Siemens SiSPC

Revision

Version	Created	Version Number	Remarks
1.0	27.05.2014		Created
1.1	02.07.2014		The events BA / BR as well as the switching command "RestoreAlerts" are new.
1.2	22.03.2018		Siemens SPC screenshots exchanged

Table of Contents

1.1.1. Installation, startup and exit	6
1.1.1.1. Multiple instances of the OPC server	7
1.1.2. Graphical Interface	8
1.1.3. Licensing the OPC Server	10
1.1.4. Configuration of the OPC server	11
1.1.4.1. Structure of the INI file	12
1.1.4.2. Read the SPC configuration	13
1.1.5. Features of the SiSPC OPC server	15
1.1.5.1. SIA events	17
1.1.5.2. The data point „SiNEO“	18
1.1.5.3. The data point „Triggered“	19
1.1.6. Screenshots of the SPC settings	20
1.1.6.1. EDP settings	21
1.1.6.2. Filter settings	23

1.1.1. Installation, startup and exit

The OPC server requires no installation. The program can basically be executed from any program path.

The OPC server is started with the appropriate exe file. The program starts minimized and can be displayed via the system tray.

It should be noted that the program path in the operating system must be registered for an OPC client access. This is done via the interface of the OPC server. For this purpose, the menu item OPC-> Register OPC Server must be selected.

To terminate the program, click on the red X in the upper right corner, or in the menu item File -> Close. The File menu also contains the Hide command, which allows the OPC server to be minimized to the system tray.

The configuration is later read out online from the device. Up to this time, a window appears at the start, indicating the missing configuration:

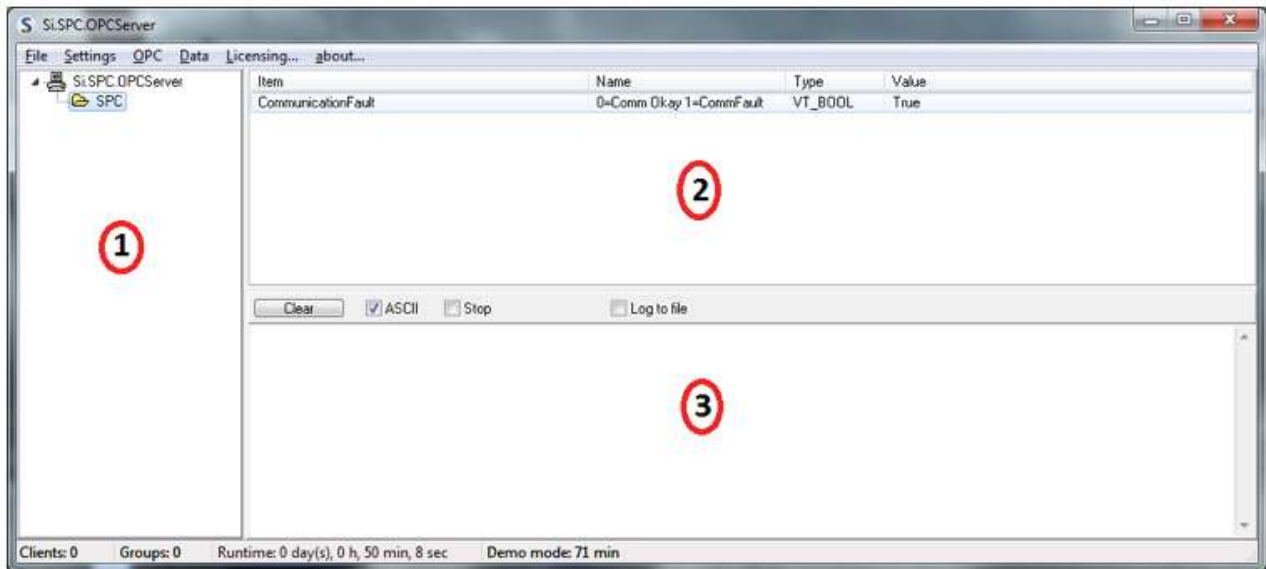


1.1.1.1. Multiple instances of the OPC server

The OPC server only supports the connection of a control center. If more than one control center is to be connected, several instances must be registered and started on a computer. In the following, the SiSpcOPC server is always spoken. Each further instance is then appended to the consecutive number, eg "SiSpcOPCServer02". The same applies to the Ini or Dat file.

Important: A separate license has to be purchased for each instance.

1.1.2. Graphical Interface



The graphical interface is divided into three sections:

1. Hierarchical tree view of data structure

The entire data structure is displayed here. An element is marked with a left mouse click and the data points that may be contained are displayed on the right side. The subordinate elements can be opened by double-clicking.

2. Overview of the included data points

In this area, the data points of a selected element are displayed in tabular form. The following information is displayed for each data point:

- **Item** Data point name
- **Name** Here, a help text is usually displayed for better identification
- **Type** Data type of the data point
- **Value** The current data point value

Note: The Value column is disabled by default. It can be displayed via the menu item Data -> Display.

3. Communication logbook

The logbook is deactivated by default and can be displayed via the menu item [Data -> Logbook](#).

The entire communication is displayed in the logbook. The [Clear](#) button deletes the contents of the logbook window. The [ASCII](#) code can be activated using the ASCII checkbox. The checkbox [Stop](#) suppresses further entries in the logbook window. When the checkbox [Log to file](#) is checked, all other entries are written to a text file. The file has the same name as the OPC server, but has the file ending [.LOG](#).

The menu line provides access to the following entries:

Menu Item	Function
FileHide	Minimizes the program to the system tray
FileClose	Terminates the program
SettingsConfiguration	Settings for the OPC server
OPCRegister	Registriert den OPC Server im Betriebssystem
OPCRemove OPC Server Registration	Removes the existing OPC server registry
OPCProtocol	Writes a log file to the OPC interface
OPCClose Clients	Terminates all connections to connected OPC clients
DataLogbook	Show or hide the logbook
DataDisplay	Show or hide the data point values
DataWrite	Opens an input mask to assign a value to a selected data point
...Licensing	Opens the licensing dialog
...about	Provides information on the version number etc. of the OPC server

The status line displays the clients and subscribed groups connected to the OPC server as well as the runtime of the OPC server. If the OPC server is started in demonstration mode, the remaining runtime is displayed.

1.1.3. Licensing the OPC Server

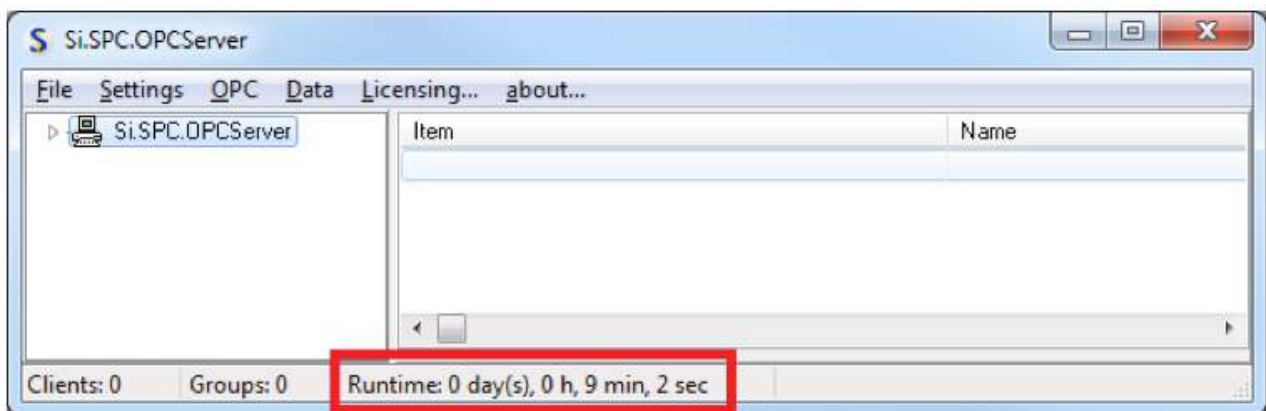
All products of Schille Informationssysteme GmbH are licensed according to the same scheme. Therefore, this is described in a separate document which is available for viewing or downloading on the Internet:

<http://www.schille.com/downloads/documents/documentations/SiDOC-20140603-de-procteron-lizensierung-anleitung.pdf>

The internal product key is "004-014-01" and will be "OPC Siemens SPC Intruder" if a current product.xml file is present.



After successful licensing and subsequent restarting of the OPC server, the current runtime of the OP is displayed in the status bar:



1.1.4. Configuration of the OPC server

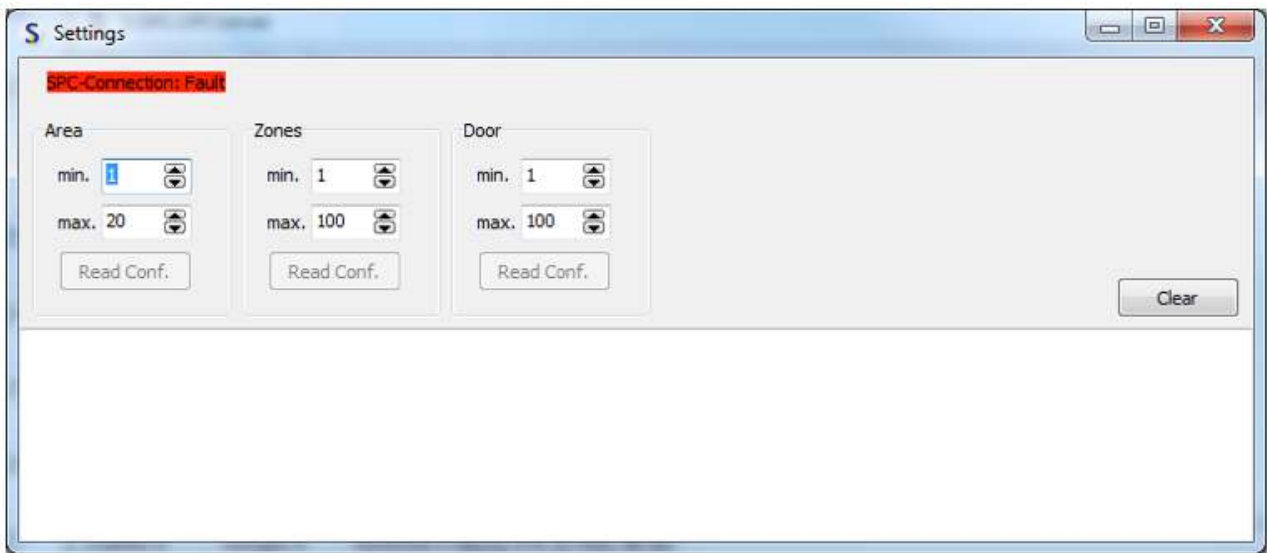
The configuration of the OPC server is done online, which means that the configuration of the OPC server is read out from the SPC. Accordingly, the communication must first be established. This is done by the SPC, which cyclically tries to reach the OPC server. For this reason, the OPC server must first be informed of the network address and port on which it is to be made. This is done via the ini file of the OPC server (area [TCP]), which is described in more detail in the next section. After the change, the OPC server must be restarted.

1.1.4.1. Structure of the INI file

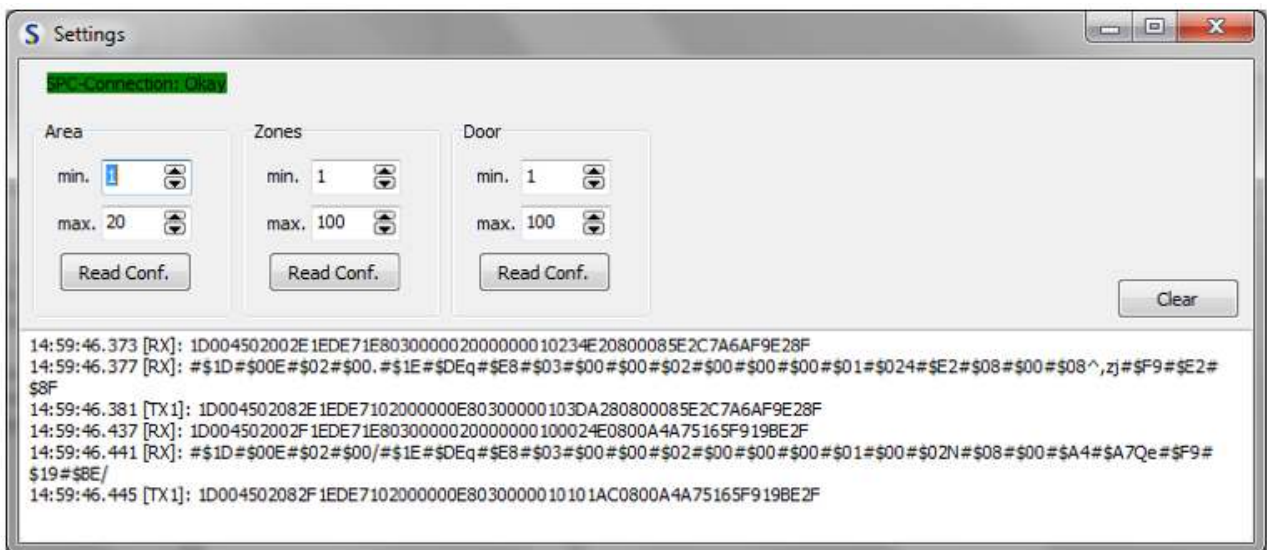
[DIALOG]		
	Param	Transfer of possible start parameters
	Language	Language of the graphical user interface
	Logging	Enable / disable logging
[TCP]		Settings for the interface to the SPC
	IP	TCP / IP address on which the SPC tries to establish the communication, eg IP = 192.168.2.101
	Port	Port on which SPC attempts to establish communication, eg port = 50000

1.1.4.2. Read the SPC configuration

After the OPC server has been started, the configuration dialog must be called up via the menu item "Settings / Configuration". In the following figure, the SPC has not yet recorded any communication, so no read-out is possible and the buttons are deactivated.



If the SPC has recorded the communication, the zones, zones and doors can be read out.



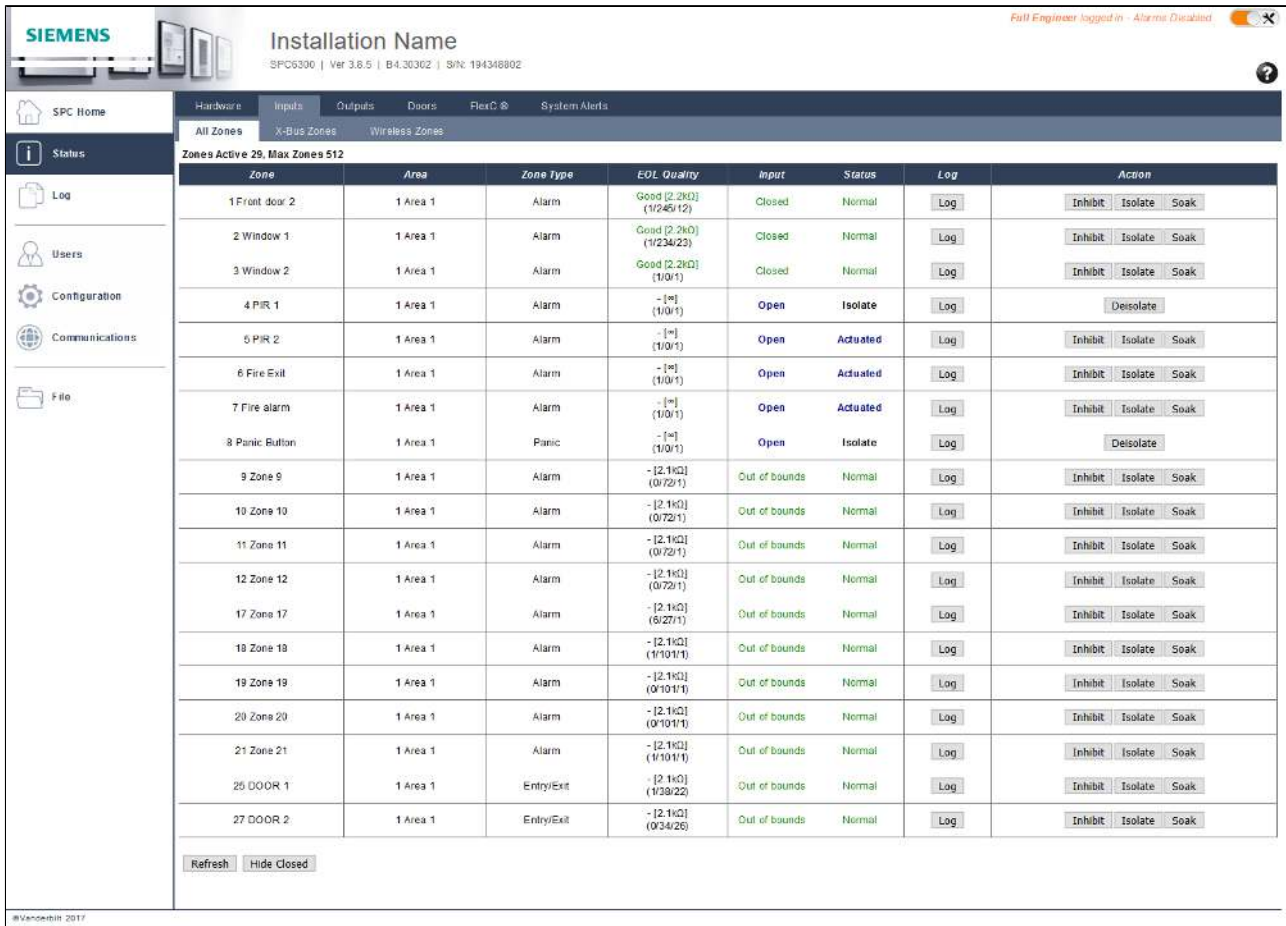
The data obtained from the SPC are stored in the file "SiSpcOPCServer.dat" in the directory of the OPC server. A separate area is created for each type of supported groupings (area / zones / doors).

In the following table, a sample configuration from the test environment:

[AREAS]		
	00001=Area 1	Area ID + Names (assigned by SPC)
	00002=Area 2	
[ZONES]		
	00003=Window 2	Zone ID + Names (assigned by SPC)
	00004=PIR 1	
	00010=Door 1	
[DOORS]		
	00001=Door 1	Door ID + Names (assigned by SPC)

1.1.5. Features of the SiSPC OPC server

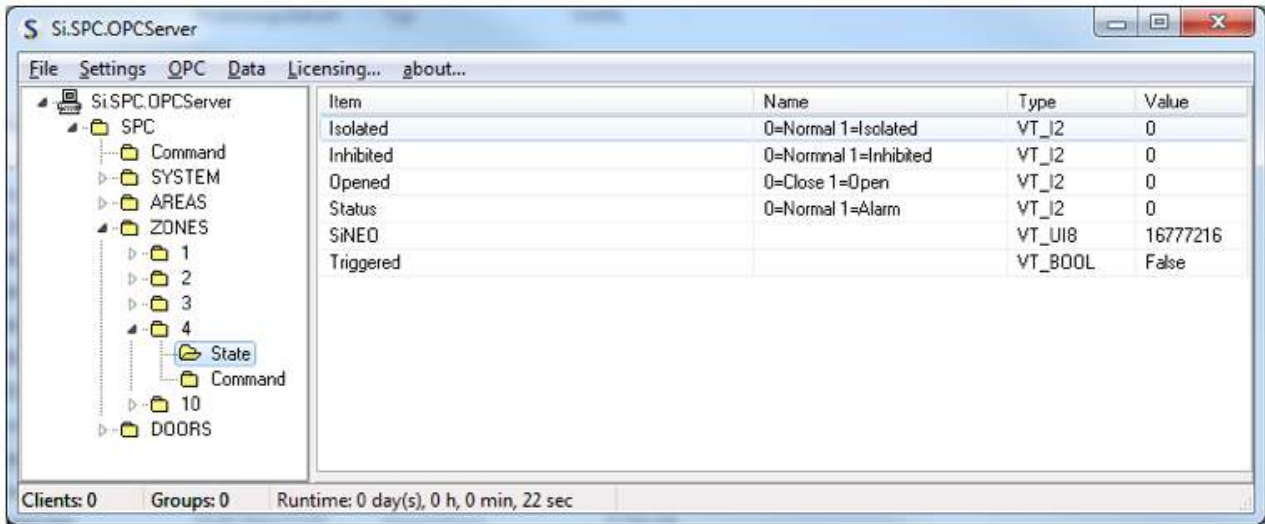
The range of functions is currently based on the WEB interface of Siemens, whereby, for example, logbooks can not be displayed within the OPC server.



The screenshot shows the Siemens SPC OPC server web interface. At the top, it displays the Siemens logo, the installation name, and version information. Below this is a navigation menu with options like Hardware, Inputs, Outputs, Doors, FlexC, and System Alerts. The main content area shows a table of alarm zones with columns for Zone, Area, Zone Type, EOL Quality, Input, Status, Log, and Action. The table lists 27 zones, including Front door, Window, PIR, Fire Exit, Fire alarm, Panic Button, and various numbered zones. Each zone row includes a 'Log' button and action buttons like 'Inhibit', 'Isolate', and 'Soak'. A sidebar on the left contains navigation options like SPC Home, Status, Log, Users, Configuration, Communications, and File. At the bottom of the table, there are 'Refresh' and 'Hide Closed' buttons.

Zone	Area	Zone Type	EOL Quality	Input	Status	Log	Action
1 Front door 2	1 Area 1	Alarm	Good [2.2k0] (1/245/12)	Closed	Normal	Log	Inhibit Isolate Soak
2 Window 1	1 Area 1	Alarm	Good [2.2k0] (1/234/23)	Closed	Normal	Log	Inhibit Isolate Soak
3 Window 2	1 Area 1	Alarm	Good [2.2k0] (1/0/1)	Closed	Normal	Log	Inhibit Isolate Soak
4 PIR 1	1 Area 1	Alarm	- [w] (1/0/1)	Open	Isolate	Log	Deisolate
5 PIR 2	1 Area 1	Alarm	- [w] (1/0/1)	Open	Actuated	Log	Inhibit Isolate Soak
6 Fire Exit	1 Area 1	Alarm	- [w] (1/0/1)	Open	Actuated	Log	Inhibit Isolate Soak
7 Fire alarm	1 Area 1	Alarm	- [w] (1/0/1)	Open	Actuated	Log	Inhibit Isolate Soak
8 Panic Button	1 Area 1	Panic	- [w] (1/0/1)	Open	Isolate	Log	Deisolate
9 Zone 9	1 Area 1	Alarm	- [2.1k0] (0/72/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
10 Zone 10	1 Area 1	Alarm	- [2.1k0] (0/72/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
11 Zone 11	1 Area 1	Alarm	- [2.1k0] (0/72/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
12 Zone 12	1 Area 1	Alarm	- [2.1k0] (0/72/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
17 Zone 17	1 Area 1	Alarm	- [2.1k0] (6/27/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
18 Zone 18	1 Area 1	Alarm	- [2.1k0] (1/10/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
19 Zone 19	1 Area 1	Alarm	- [2.1k0] (0/10/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
20 Zone 20	1 Area 1	Alarm	- [2.1k0] (0/10/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
21 Zone 21	1 Area 1	Alarm	- [2.1k0] (1/10/1)	Out of bounds	Normal	Log	Inhibit Isolate Soak
26 DOOR 1	1 Area 1	Entry/Exit	- [2.1k0] (1/38/22)	Out of bounds	Normal	Log	Inhibit Isolate Soak
27 DOOR 2	1 Area 1	Entry/Exit	- [2.1k0] (0/34/26)	Out of bounds	Normal	Log	Inhibit Isolate Soak

The state is reflected in the "State" data points:



Item	Name	Type	Value
Isolated	0=Normal 1=Isolated	VT_I2	0
Inhibited	0=Normal 1=Inhibited	VT_I2	0
Opened	0=Close 1=Open	VT_I2	0
Status	0=Normal 1=Alarm	VT_I2	0
SiNEO		VT_UI8	16777216
Triggered		VT_BOOL	False

Clients: 0 Groups: 0 Runtime: 0 day(s), 0 h, 0 min, 22 sec

Switching commands can be sent via the control commands to the SPC, regardless of the value transferred.

1.1.5.1. SIA events

All status changes are transmitted via so-called SIA events. A list of all possible events is available within Siemens.

Important: The documentation may not be passed on by the company Schille Informationssysteme GmbH and is therefore to be procured independently.

The following events are processed in the version of the OPC server:

BA / BR / DC / DD / DF / DG / DO / DR / DX / CG / OG / NL / BB / BU / ZO / ZC / YT / YR






Important: An extension for further events is possible. However, a test system or telegram messages may be required.

These events must be enabled separately within the SPC, otherwise no notification from the SPC is made to the OPC server. Some screen shots of the settings from the test environment can be found without comment at the end of this document.

1.1.5.2. The data point „SiNEO“

The "SiNEO" data point is the numeric value of the state of the data point. It is based on a 64bit key, which is defined within the document "SiNEO-Codes", and thus determines the symbols within the SiVMS-Command versions.

The following is a small excerpt:

4096	0000-0000-0000-1000	Switched off	Bright orange	0xffc800	
65536	0000-0000-0001-0000	Alarm	Red	0xff0000	
16777216	0000-0000-0100-0000	Failure	Gray / red crossed		
536870912	0000-0000-2000-0000	Unlocked	Bright violet	0xff80ff	
4294967296	0000-0001-0000-0000	Disruption	Yellow	0xffff00	

The document "SiNEO-Codes" can be obtained separately.

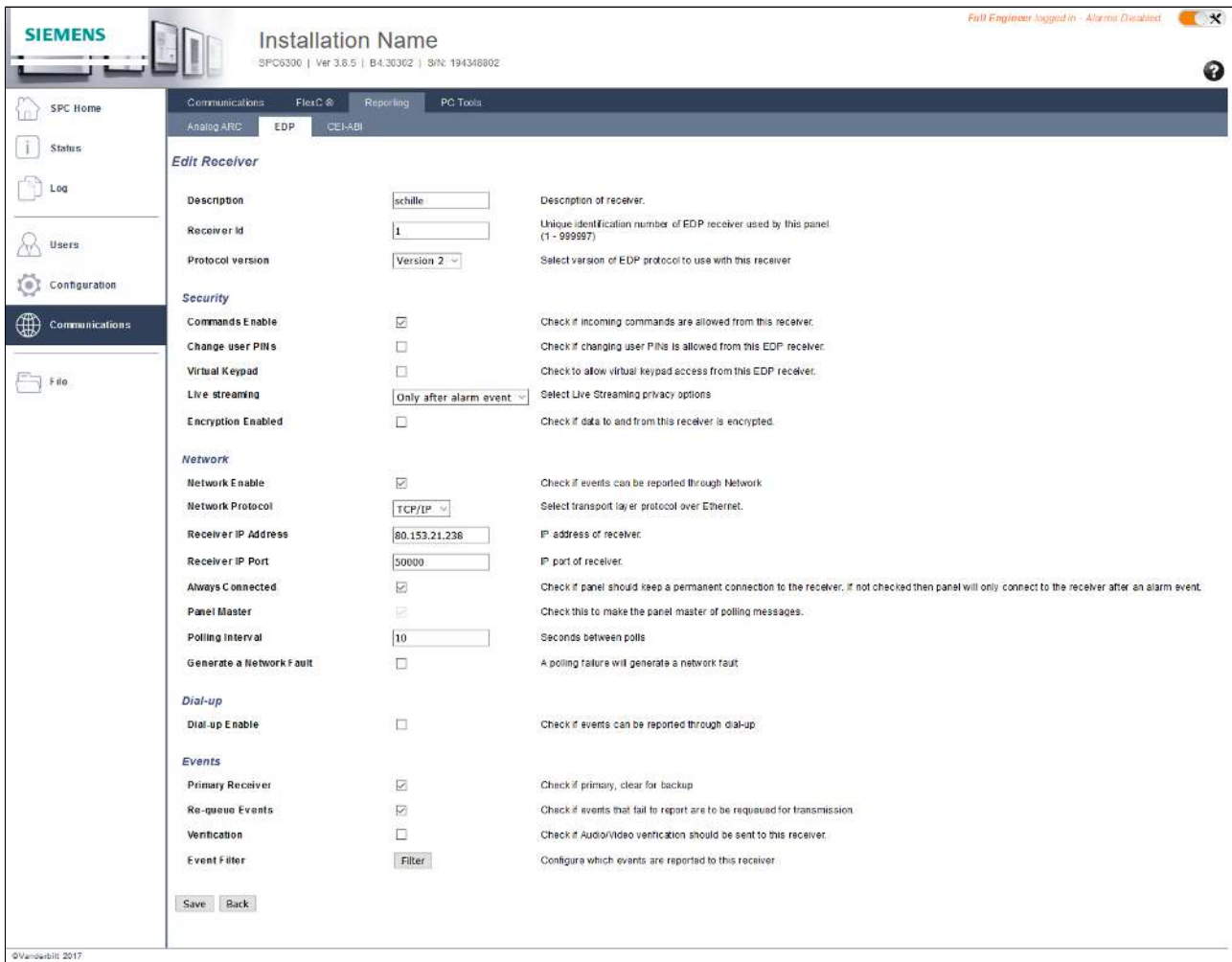
1.1.5.3. The data point „Triggered“

This data point is set for 1 second for each event that can be assigned to this area, zone or door. Whether or not the value changes with a data point.

The background is that a recording is to be started when an access card is detected on the reader. The value of the data point "Access" changes only if a valid valid card is detected after a valid, or after an invalid, valid card.

1.1.6. Screenshots of the SPC settings

1.1.6.1. EDP settings



The screenshot shows the 'Edit Receiver' configuration page in the Siemens SPC software. The interface includes a top navigation bar with 'SIEMENS' and 'Installation Name' (SPC6300 | Ver 3.6.5 | B4.30302 | SN: 194348802). A left sidebar contains navigation options like 'SPC Home', 'Status', 'Log', 'Users', 'Configuration', 'Communications', and 'File'. The main content area is titled 'Edit Receiver' and is divided into several sections:

- Description:**
 - Description: (Description of receiver)
 - Receiver id: (Unique identification number of EDP receiver used by this panel (1 - 999997))
 - Protocol version: (Select version of EDP protocol to use with this receiver)
- Security:**
 - Commands Enable: (Check if incoming commands are allowed from this receiver)
 - Change user PINs: (Check if changing user PINs is allowed from this EDP receiver)
 - Virtual Keypad: (Check to allow virtual keypad access from this EDP receiver)
 - Live streaming: (Select Live Streaming privacy options)
 - Encryption Enabled: (Check if data to and from this receiver is encrypted)
- Network:**
 - Network Enable: (Check if events can be reported through Network)
 - Network Protocol: (Select transport layer protocol over Ethernet)
 - Receiver IP Address: (IP address of receiver)
 - Receiver IP Port: (IP port of receiver)
 - Always Connected: (Check if panel should keep a permanent connection to the receiver, if not checked then panel will only connect to the receiver after an alarm event)
 - Panel Master: (Check this to make the panel master of polling messages)
 - Polling Interval: (Seconds between polls)
 - Generate a Network Fault: (A polling failure will generate a network fault)
- Dial-up:**
 - Dial-up Enable: (Check if events can be reported through dial-up)
- Events:**
 - Primary Receiver: (Check if primary, clear for backup)
 - Re-queue Events: (Check if events that fail to report are to be requeued for transmission)
 - Venification: (Check if Audio/Video venification should be sent to this receiver)
 - Event Filter: (Configure which events are reported to this receiver)

At the bottom of the configuration area, there are 'Save' and 'Back' buttons. The footer of the page reads '©Vandalbilt 2017'.

Name der Inst.

SPC0300 | Ver 3.8.5 | B4 30302 | SN: 194348802

Konfigurationsmodus Angemeldet -
Alarmer gesperrt

Kommunikation
FlexC
Div. Protokolle
PC-Tools

Empfänger
EDP
CEP-ABI

EDP-Einstellungen (Zentrale)

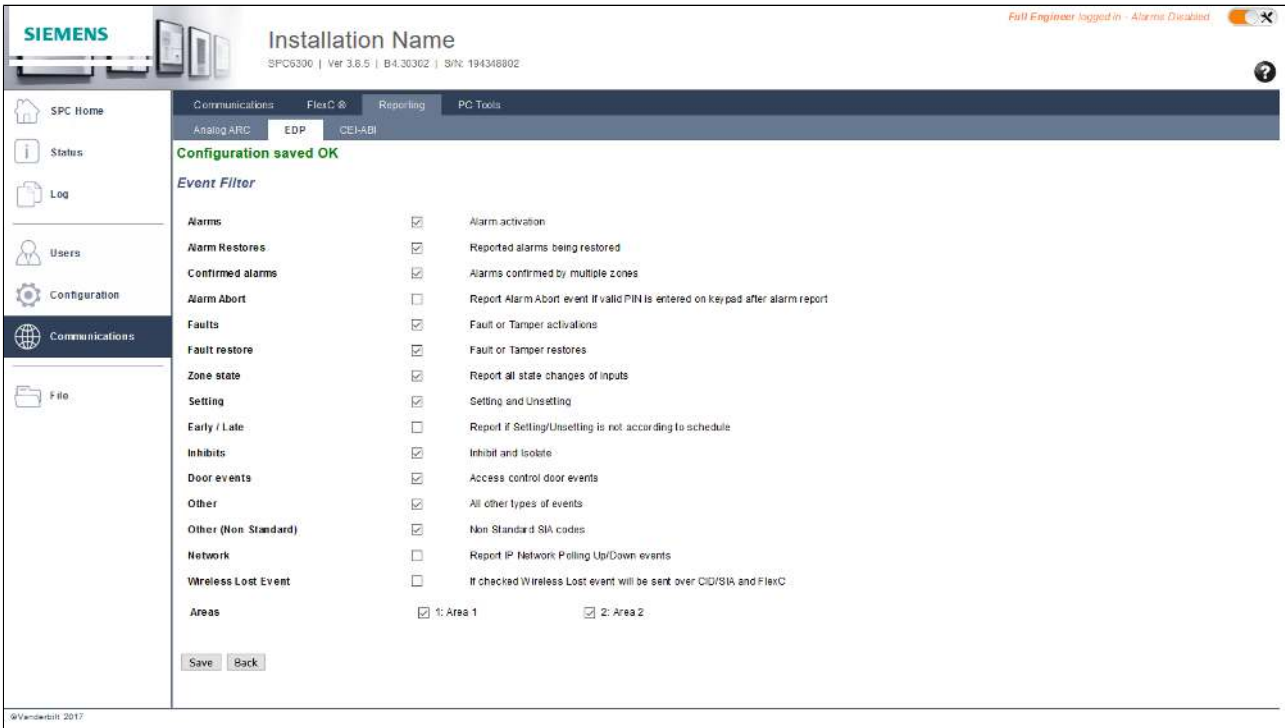
Aktivieren	<input checked="" type="checkbox"/>	Auswählen, um die EDP Ereignisübertragung zu aktivieren
EDP Zentralen-ID	<input type="text" value="1"/>	Eindeutige IdentNr., welche vom EDP Empfänger zur Identifikation der Zentrale verwendet wird. (ID muss einmalig sein) (1 - 999997)
Zentralen IP Netzwerkport	<input type="text" value="52000"/>	IP Netzwerkport auf dem IP-Pakete empfangen werden (Standard ist 50000). (1 - 65535)
Maximale Packetgrösse	<input type="text" value="1440"/>	Maximale Anzahl Bytes eines EDP Packet bei IP Übertragung. (500 - 1440)
Timeout erneute Übertragung	<input type="text" value="10"/>	Dauer (in Sek.), bis eine nicht quittierte Meldung erneut übertragen wird. (1 - 199)
Anzahl e.m. Übertragungsversuche	<input type="text" value="10"/>	Maximale Anzahl der erneuten Übertragungsversuche. (0 - 199)
Wählversuche	<input type="text" value="10"/>	Maximale Anzahl an fehlgeschlagenen Wählversuchen bis zur Modemsperre. (1 - 199)
Wählpause	<input type="text" value="30"/>	Dauer der Wählpause (in Sek.) nach einem fehlgeschlagenen Wählversuch. (1 - 199)
Modemsperre	<input type="text" value="480"/>	Dauer (in Min.), die das Modem keinen Wählvers. startet, wenn die max. Anzahl an Wählvers. erreicht wurde (0 = keine Modemsp.). (0 - 999999)

Ereignisspeicherung

Status Kommunikation	<input checked="" type="checkbox"/>	Speichert alle Änderungen der Verfügbarkeit der Kommunikationswege im Systemlogbuch.
EDP Befehle	<input checked="" type="checkbox"/>	Speichert alle ausgeführten EDP Befehle im Systemlogbuch
AV Ereignisse	<input checked="" type="checkbox"/>	Speichert Audio/Video Verifikation Ereignisse, welche an den Empfänger geschickt werden.
AV Streaming	<input checked="" type="checkbox"/>	Speichert den Beginn einer Audio/Video Live Übertragung im Systemlogbuch.
Benutzung virtuelles BT	<input checked="" type="checkbox"/>	Speichert die Aktivierung eines virtuellen Bedienteils im Systemlogbuch.

©Vanderbilt 2017

1.1.6.2. Filter settings



The screenshot shows the Siemens SPC configuration interface. At the top, it displays the Siemens logo, the installation name, and version information (SPC6300 | Ver 3.8.5 | B4.30302 | SN: 194348802). The user is logged in as 'Full Engineer' with 'Alarms Disabled'.

The interface is divided into a left sidebar with navigation options: SPC Home, Status, Log, Users, Configuration, Communications (selected), and File. The main content area shows the 'Event Filter' configuration page under the 'Reporting' tab. A green message at the top of the main area states 'Configuration saved OK'.

The 'Event Filter' section contains a list of settings with checkboxes:

- Alarms**
 - Alarm activation
- Alarm Restores**
 - Reported alarms being restored
- Confirmed alarms**
 - Alarms confirmed by multiple zones
- Alarm Abort**
 - Report Alarm Abort event if valid PIN is entered on keypad after alarm report
- Faults**
 - Fault or Tamper activations
- Fault restore**
 - Fault or Tamper restores
- Zone state**
 - Report all state changes of inputs
- Setting**
 - Setting and Unsetting
- Early / Late**
 - Report if Setting/Unsetting is not according to schedule
- Inhibits**
 - Inhibit and Isolate
- Door events**
 - Access control door events
- Other**
 - All other types of events
- Other (Non Standard)**
 - Non Standard SIA codes
- Network**
 - Report IP Network Pinging Up/Down events
- Wireless Lost Event**
 - If checked Wireless Lost event will be sent over CID/SIA and FlexC
- Areas**
 - 1: Area 1
 - 2: Area 2

At the bottom of the configuration area, there are 'Save' and 'Back' buttons. The footer of the page indicates '©Vanderbilt 2017'.

The information in these documents may be changed without prior warning. This manual may not be duplicated or disclosed to third parties in full or in part without the prior written agreement of Schille Informationssysteme GmbH.

© 2018 Schille Informationssysteme GmbH / Schille Services GmbH.

All rights reserved. We reserve the right to make technical alterations. All products mentioned by name are trademarks or registered trademarks of their respective manufacturer.

The documentation describes - OPC Server - Siemens SPC - Installation, Configuration, Usage - V1.2 - Modified version dated 22.03.2018