FPA-5000 OPC-Server

FSM-5000-OPC

BOSCH

en User Guide

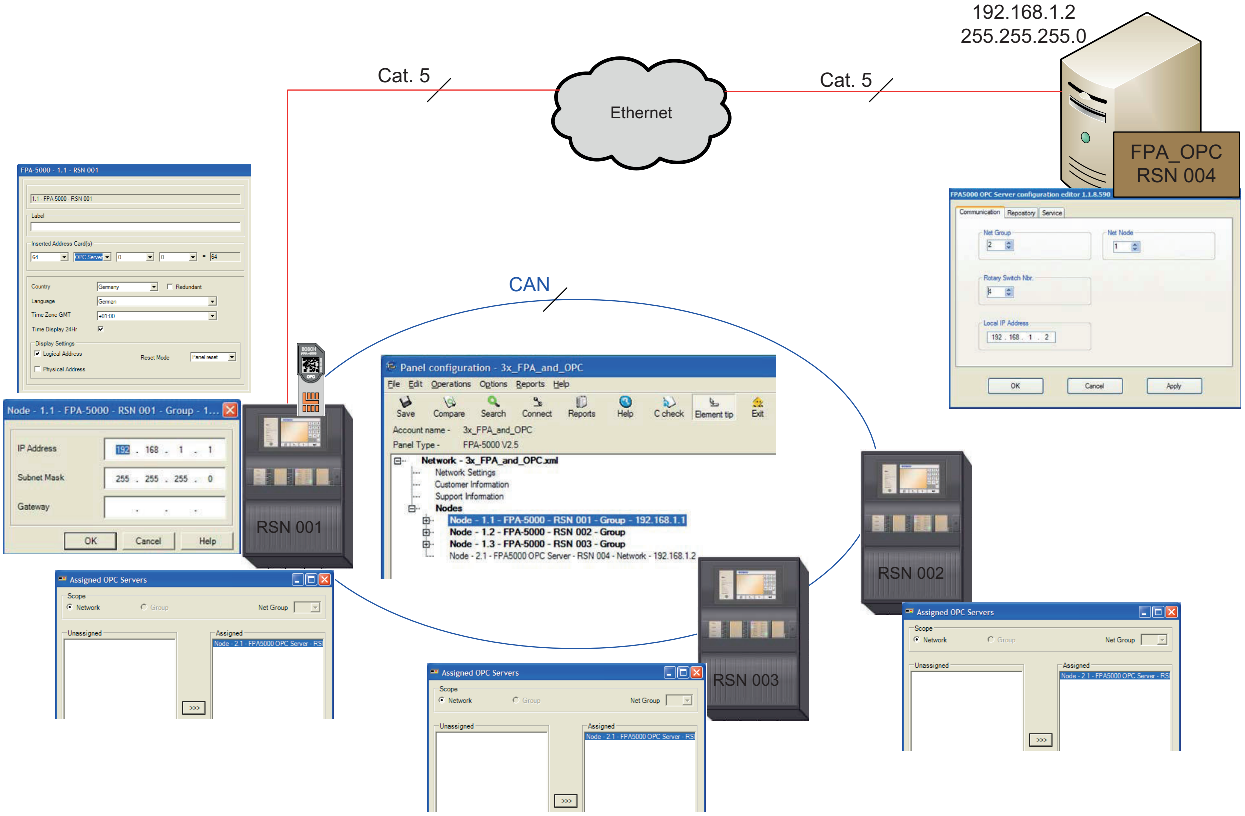
Table of contents

1 Purpose

This document contains information on accessing and controlling FPA-5000 networks via OPC using the FSM-5000-OPC server. It is designed to aid in successfully configuring the FPA-5000 network and the corresponding FSM-5000-OPC server to enable communication between the two via a single or redundant Ethernet connection. In completing these steps successfully a functional interface is provided for a subsequent connection to BIS 2.x which functions as OPC client.

Notice!
Setting up and configuring an FPA-5000 network controlled by an OPC server requires basic IT knowledge.

The information refers to FSM-5000-OPC Version 1.1.11 and later and supported FPA-5000 software.



FPA5000 OPC Server configuration editor 1.1.8.590
Communication | Repository | Service
Net Group: 2
Net Node: 1
Rotary Switch Nbr.: 4
Local IP Address: 192 . 168 . 1 . 2
OK Cancel Apply

FPA-5000 - 1.1 - RSN 001
1.1 - FPA-5000 - RSN 001
Label:
Inserted Address Card(s): 64 | OPC Server | 0 | 0 = 64
Country: Germany ☐ Redundant
Language: German
Time Zone GMT: +01:00
Time Display 24Hr: ☑
Display Settings
☑ Logical Address
☐ Physical Address
Reset Mode: Panel reset

Node - 1.1 - FPA-5000 - RSN 001 - Group - 1...
IP Address: 192 . 168 . 1 . 1
Subnet Mask: 255 . 255 . 255 . 0
Gateway: . . .
OK Cancel Help

Panel configuration - 3x_FPA_and_OPC
File Edit Operations Options Reports Help
Save Compare Search Connect Reports Help C check Element tip Exit
Account name - 3x_FPA_and_OPC
Panel Type - FPA-5000 V2.5

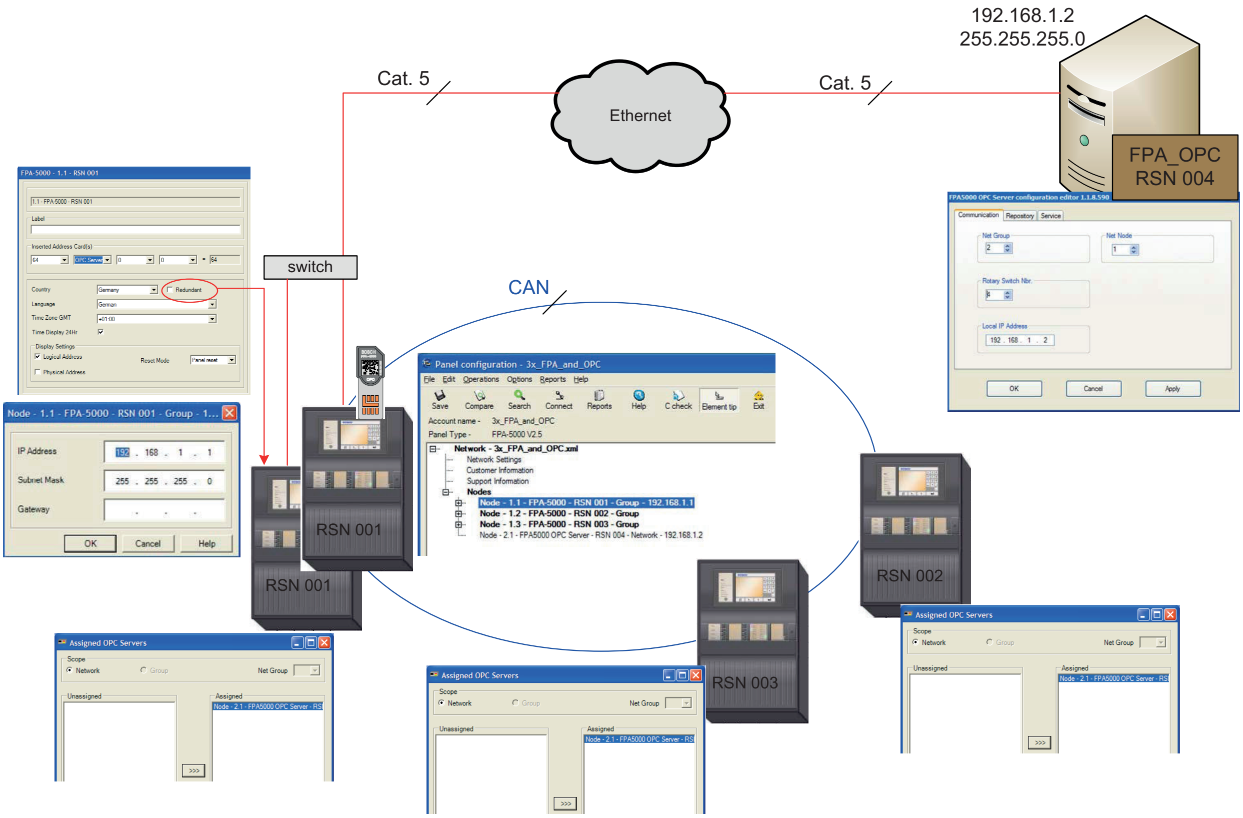
```
Network - 3x_FPA_and_OPC.xml
    Network Settings
    Customer Information
    Support Information
  Nodes
      Node - 1.1 - FPA-5000 - RSN 001 - Group - 192.168.1.1
      Node - 1.2 - FPA-5000 - RSN 002 - Group
      Node - 1.3 - FPA-5000 - RSN 003 - Group
      Node - 2.1 - FPA5000 OPC Server - RSN 004 - Network - 192.168.1.2
```

Assigned OPC Servers
Scope: ● Network ○ Group Net Group
Unassigned
Assigned: Node - 2.1 - FPA5000 OPC Server - RS
>>>

Assigned OPC Servers
Scope: ● Network ○ Group Net Group
Unassigned
Assigned: Node - 2.1 - FPA5000 OPC Server - RS
>>>

Assigned OPC Servers
Scope: ● Network ○ Group Net Group
Unassigned
Assigned: Node - 2.1 - FPA5000 OPC Server - RS
>>>

Figure 1.1: FPA-5000 network controlled by an OPC server with single Ethernet connection



FPA-5000 - 1.1 - RSN 001

1.1 - FPA-5000 - RSN 001

Label

Inserted Address Card(s): 64 | OPC Server | 0 | 0 = 64

Country: Germany ☐ Redundant

Language: German

Time Zone GMT: +01:00

Time Display 24Hr ☑

Display Settings: ☑ Logical Address ☐ Physical Address Reset Mode: Panel reset

Node - 1.1 - FPA-5000 - RSN 001 - Group - 1...

IP Address: 192 . 168 . 1 . 1

Subnet Mask: 255 . 255 . 255 . 0

Gateway: . . .

OK Cancel Help

Panel configuration - 3x_FPA_and_OPC

File Edit Operations Options Reports Help

Save Compare Search Connect Reports Help C check Element tip Exit

Account name - 3x_FPA_and_OPC

Panel Type - FPA-5000 V2.5

- Network - 3x_FPA_and_OPC.xml
  - Network Settings
  - Customer Information
  - Support Information
  - Nodes
    - Node - 1.1 - FPA-5000 - RSN 001 - Group - 192.168.1.1
    - Node - 1.2 - FPA-5000 - RSN 002 - Group
    - Node - 1.3 - FPA-5000 - RSN 003 - Group
    - Node - 2.1 - FPA5000 OPC Server - RSN 004 - Network - 192.168.1.2

FPA5000 OPC Server configuration editor 1.1.8.590

Communication | Repository | Service

Net Group: 2

Net Node: 1

Rotary Switch Nbr.: 4

Local IP Address: 192 . 168 . 1 . 2

OK Cancel Apply

Assigned OPC Servers

Scope: ● Network ○ Group Net Group

Unassigned

Assigned: Node - 2.1 - FPA5000 OPC Server - RS

>>>

Assigned OPC Servers

Scope: ● Network ○ Group Net Group

Unassigned

Assigned: Node - 2.1 - FPA5000 OPC Server - RS

>>>

Assigned OPC Servers

Scope: ● Network ○ Group Net Group

Unassigned

Assigned: Node - 2.1 - FPA5000 OPC Server - RS

>>>

Figure 1.2: FPA-5000 network controlled by an OPC server with redundant panel

2 Preconditions

The following must be available to set up an OPC server in an FPA-5000 network:

- FPA-5000 network with MPC-xxxx-B or MPC-xxxx-C
- ADC-5000-OPC license card
- Latest FSP-5000-RPS installation CD
- The correct FSM-5000-OPC Server version for the respective FPA-5000 release (available on FSP-5000-RPS installation CD or download from Extranet). Look up the compatible version in the readme file of the FSM-5000-OPC software.
- Existing Ethernet network with Cat. 5e cable
- PC to install FSM-5000-OPC on

3 Installation

3.1 Installation of FSM-5000-OPC Software

Task: FSM-5000-OPC is running on a PC.

Notice!

.NET Framework 2.0 must be installed to run FSM-5000-OPC. If it is not present install it from the Pre-Requisites folder of the FSP-5000-RPS installation CD or download it from http://www.microsoft.com/downloads/en/default.aspx

1. On the setup disc open the folder that contains the FSM-5000-OPC installation.
2. Click “FPA5000OPCServer.msi” and follow the installation instructions.
3. Open the Configuration Editor:
   Start → All Programs → Bosch → FPA5000OPC-Server and run Configuration Editor
   or open Windows Explorer, navigate to
   C:\Program Files\Bosch\FPA 5000OPC-Server and run ConfigEditor.exe
   or for FSM-5000-OPC version 1.2 right click on the respective icon in the taskbar notification area and choose “Configuration”.
4. Under the “Communications“ tab adopt the settings that were entered for the node “FPA5000 OPC Server” in the RPS configuration.
5. Configure the Windows firewall. The configuration depends on the operating system and the used firewall.
6. Restart the system.
   FSM-5000-OPC will be running after restart, indicated by a notification icon in the taskbar notification area.

Notice!

The installation of FSM-5000-OPC is only released for the Windows operating systems listed in *Technical data, page 13*. For other operating systems the installation may succeed but was not tested and is therefore on your own risk.

3.2 Remote Access to the FSM-5000-OPC Server from the Building Integration System (BIS)

Task: FSM-5000-OPC is running on a PC in your local network interconnected with the panel network. The OPC client application runs on a PC of the Building Integration System (BIS) in the same local network. It remotely accesses the FSM-5000-OPC server.

Server side PC

Notice!

Consider the naming conventions for users, groups and passwords (“MgtS-Service” “BISUsers“) given in this description. The Building Integration System (BIS) internally makes use of these conventions. As BIS internally always assumes the same user and password by convention it is not necessary to logon as a distinct user or enter the password. If you remotely access the FSM-5000-OPC server with another client, you are free to choose names and a password on the server side, as long as you specify the matching logon when your client connects to the OPC server.

All of the following settings refer to the PC running the OPC server.

Notice!

The following steps are based on the Windows XP operating system. For all other operating systems the paths to the respective dialogs might be slightly different.

Create user „MgtS-Service“ manually

1. Go to **Start** – **Settings** – **Control Panel** – **Administrative Tools** – **Computer Management** – **Local Users and Groups** – **Users** and enter the following values:
   - **Username** (case sensitive): "MgtS-Service"
   - **Password**: Please contact BIS customer support if it is the BIS client you are using.
   - **Member of group**: Administrators
   - **User must change password at next logon**: NO
   - **User cannot change password**: YES
   - **Password never expires**: YES
2. Tab **Local Security Settings**:
   - **Log on as a service**: YES
   - **Log on as a batch job**: YES

Notice!

The user name and password must be identical with the user of the login server.

Create group BISUsers manually

1. Go to **Start** – **Settings** – **Control Panel** – **Administrative Tools** – **Computer Management** – **Local Users and Groups** – **Groups** and enter the following value:
   - Group name (case sensitive): **"BISUsers"**
2. Add the user “MgtS-Service” to that group
3. Add the user who logs in from the operating system of the login server and who operates the ConfigurationBrowser to that group too.

DCOM-Settings for the group BISUsers

1. Click Start > Run....
2. Type dcomcnfg <ENTER>.
3. Open the tree on the left side: **Console Root** > **Component Services** > **Computers** > **My Computer**.
4. Right click on **My Computer** and choose **Properties**.
5. Choose the **COM Security** tab.
6. Add the new group “BISUsers” by using **Access Permissions** – **Edit Defaults** – **allow Local and Remote Access**.
7. Add the new group “BISUsers” by using **Launch and Activation Permissions** – **Edit Defaults** – **allow Local and Remote Launch** and **allow Local and Remote Activation**.
8. Add the new group “BISUsers” by using **Launch and Activation Permissions** – **Edit Limits** – **allow Local and Remote Launch** and **allow Local and Remote Activation**.
9. Reboot the PC.

Set Local Security Policy

Perform the following procedure to set the Local Security Policy.

For operating systems Windows XP / Windows Server 2003 / Windows 7 / Windows Server 2008:

1. Go to **Start** - **Control Panel** - **Administrative Tools**, and select **Local Security Policy**.
2. Open the tree on the left side: **Security Settings** - **Local Policies**- **Security Options**.

3. Select on the right side**: Network access: Sharing and security model for local accounts**.
4. Right click on this selection to open **Properties** and choose **Classic– local users authenticate as themselves**.
5. Close all windows and restart the PC.
6. Open **dcomcnfg** and go to **services** (Local).
7. Select **FPA5000OPCServer** - **Properties** and open the **Log-On** tab
8. Choose radio button **This Account** – **User: MgtS-Service** and the password.
9. You are requested to restart the service in order to activate the changes. Select **Stop and Start** (or **Restart**).

Client side PC

On the PC running the FSM-5000-OPC client software connect to the server with the same logon you used to start the service. This also applies if you install both on the same PC. The OPC server installation routine installs the service for the local system account by default. Change the service to “MgtS-Service” when you use the OPC server with BIS.

3.3 Backward Compatibility

There are two setup packages to provide backward compatibility.
To install the respective file

1. Go to the Compatibility folder on the setup disk
2. Double click the respective msi-file

Notice!

Only use these packages if you require compatibility with solutions designed for versions prior to version 1.1 of FSM-5000-OPC server.

3.3.1 Package: BIS600StateConversion.msi

Description: States of the OPC server mapped to an offset of 600 instead of line status designed for backward compatibility of OPC Server version 1.1 with older clients. For instance configurations read by BIS 1.0.x requires it in order to work with the 1.1.x OPC Server.
Precondition: OPC Server ≥ 1.1.x installed.
Postcondition: Registry entry for OPC configuration set.

3.3.2 Package: LanguageDependentCommand.msi

Description: The commands are language dependent like OPC Server 1.0.x. Designed for backward compatibility of OPC Server version 1.1 with older clients. For instance configurations read by BIS 1.0.x requires it in order to work with the 1.1.x OPC Server.
Precondition: OPC Server ≥ 1.1.x installed
Postcondition: Registry entry for OPC configuration set.

4 Step-by-Step Configuration

4.1 FSP-5000-RPS

1. Open the FSP-5000-RPS programming software.
2. In an existing 2.x configuration select “Nodes” in the tree view and choose “Create FPA-5000 OPC- Server” in the context menu.
   A new node with name FPA-5000 OPC-Server is created and a dialog box for configuration is opened.
3. Configure the OPC server node.
   Enter the virtual RSN and logical node.
4. Choose **IP Settings...** to enter the IP settings dialog.
5. Edit the fields accordingly. **IP Address** and **Subnet Mask** are mandatory fields, **Gateway** is optional.

Notice!

The settings must match the network adapter/card settings of the computer the FSM-5000-OPC Server will be installed on!

The values of Net Group and Node Address, the RSN and the IP address are required to configure the OPC server.

6. Confirm your changes with **OK** and leave the dialog.
7. Double-click on the FPA-5000 panel node that will be physically connected to the Ethernet.
   A dialog box for configuration opens.
8. Choose **IP Settings...** to enter the IP settings dialog.
9. Edit the fields accordingly. Panels not directly connected to the Ethernet are not assigned an IP address.
10. Confirm your changes with **OK** and leave the dialog.
11. Double-click on the “FPA-5000” node, e.g. “FPA 5000 – 1.1 – RSN
    A dialog box for FPA-5000 additional configuration opens
12. Select **OPC Server** under a vacant **Inserted address card(s)** field.

Notice!

It is mandatory that this FPA-5000 node is then assigned to the OPC server!

13. Choose the country and the language from the list

Notice!

Take care about the country and language settings. BIS 2.x will display commands and detector names in the selected language.

14. Confirm your settings with **OK** and leave the dialog.
15. Double click on **Assigned servers**.
    A dialog box opens.
16. Assign the panel to the OPC server. Repeat this task for each node that is to transmit its states to the OPC server.
17. Confirm your changes with **OK** and leave the dialog.

4.2 Panel Controller MPC-xxxx-B or MPC-xxxx-C

1. Insert the ADC-5000-OPC card into one of the vacant address card slots.
2. Go to the node that has been assigned an IP address and connect the Cat.-5 cable to the MPC-xxxx-B or MPC-xxxx-C “Ethernet” port (RJ45).

4.3 PC/Server

1. Connect the Cat.-5 cable to the PC Ethernet port. Afterwards open the DOS command window and successfully “ping” the panel controller.
2. Right click on the OPC icon in the taskbar notification area and open the **Connection** dialog. A list with all identified panels and their respective connection status is displayed. If the configuration was successful, all panels which are assigned to the OPC server should have the status “connected”.
   You can also find these information in a log file, located on C:\Program Files\Bosch \FPA5000 OPC-Server\Log (for Windows XP, might be slightly different for other operating systems).

5 Troubleshooting

If the configuration of the FSM-5000-OPC server doesn’t work with the FPA-5000 network try the following:

- Confirm on the panel controller that the IP address is assigned and “ping” the OPC server.
- If the Ping request is answered but the configuration still doesn’t work please check
  - all settings on the panel,
  - all settings in the FSM-5000-OPC Configuration Editor,
  - the Ethernet adapter settings in the Window’s System Configuration.
- De-activate firewall
- Follow these steps:
  - Stop OPC (see “Service” tab in Configuration Editor)
  - Delete bin file(s) under C:\MPOPCServer\Repository
  - Start OPC → A new file per node will be created.
- If no elements are shown, check whether the Repository folder exists and whether it contains a bin file for each node. The files are located under *C:\MPOPCServer\Repository*.
- On the MPC panel controller go to **Diagnostics** – **Network** – **Routing table.**
  A table with routing information is displayed. All networked nodes that can be reached via the panel and that are recognized within the system network are displayed under Node. Aside the respective interfaces via which the connected network nodes are connected to the panel are displayed. If the OPC server configuration is correct there must be an entry under **Node** with the RSN of the OPC server node and the interface “UDP tunnel”.
- Make sure that the panel controller does not show any troubles which could concern the OPC server node or the network communication in general.
- Verify that OPC card is detected by panel:
  Choose in the start menu of the panel controller: **Diagnostics** - **Hardware** - **Address cards**

6 Technical data

Supported OPC standards:

- DA 2.0
- AE 1.01

Other Standards

- “BIS Common Requirements” (Bosch standard).

Supported operating systems:

- Windows XP Professional
- Windows 2003 Server 32-bit
- Windows 2008 Server 64-bit
- Windows 2008 Server R2 64-bit
- Windows 7 32-bit
- Windows 7 64-bit

Limits

For each panel approximately 2000 OPC items can be created in maximum configuration.

Memory

For configuration data caching a file with approximately 200kb is stored for each panel in the repository folder.

Licensing

Each OPC Server requires an OPC license card (ADC-5000-OPC) in one of the assigned FPA-5000 panels.

Additional Information

LAN Technology Specifications:

Name	IEEE Standard	Data Rate	Media Type	Maximum Distance
Ethernet	802.3	10 Mbps	10Base-T	100 meters
Fast Ethernet/ 100Base-T	8ß2.3u	100 Mbps	100Base-TX 100Base-FX	100 meters 2000 meters
Gigabit Ethernet/ GigE	802.3z	1000 Mbps	1000Base-T 1000Base-SX 1000Base-LX	100 meters 275/550 meters 550/5000 meters
10 Gigabit Ethernet	IEEE 802.3ae	10 Gbps	10GBase-SR 10GBase-LX4 10GBase-LR/ER 10GBase-SW/LW/EW	300 meters 300m MMF/ 10km SMF 10km/40km 300m/10km/40km

Guide to Ethernet Coding

10	at the beginning means the network operates at 10Mbps.
BASE	means the type of signaling used is baseband.
2 or 5	at the end indicates the maximum cable length in meters.
T	at the end stands for twisted-pair cable.

X	at the end stands for full duplex-capable cable.
FL	at the end stands for fiber optic cable.

For example: 100BASE-TX indicates a Fast Ethernet connection (100 Mbps) that uses a twisted pair cable capable of full-duplex transmissions.

Cable Grade Capabilities

Cable Name	**Makeup**	**Frequency Support**	**Data Rate**	**Network Compatibility**
Cat-5	4 twisted pairs of copper wire -- terminated by RJ45 connectors	100 MHz	Up to 1000Mbps	ATM, Token Ring, 1000Base-T, 100Base-TX, 10Base-T
Cat-5e	4 twisted pairs of copper wire -- terminated by RJ45 connectors	100 MHz	Up to 1000Mbps	10Base-T, 100Base-TX, 1000Base-T
Cat-6	4 twisted pairs of copper wire -- terminated by RJ45 connectors	250 MHz	1000Mbps	10Base-T, 100Base-TX, 1000Base-T

7 Appendices

7.1 Appendix A.1 - State Table 1

OPC Item Value	Internal Panel Compound State	Description
600	Invalid	
601	Normal	
602	Fault	
603	Fire	
604	Fire Pre	1st state AND / Cross zoning
605	Fire verify	Alarm Verification
606	Heat	
607	Supervisory	Supervisory Error
608	Smoke	
609	Activate	
610	Activation failed	
611	Tamper	
612	Cover open	Cover is open
613	Paper out	Paper is out
614	Threshhold Alarm	1st stage fire, threshold
615	Trouble light	Light trouble, e.g. C-Sensor of a combined detector not working
616	Panel Restart by Watchdog	Panel restarted by watchdog
617	On	
618	Off	
619	Pollution	
620	Pollution light	
621	Monitor	
622	Water	
623	Power Fail	
624	Manual Alarm	
625	Fire PAS	PAS (Wait for acknowledge)
626	Fire PAS	PAS (Investigate)
627	Address card change	Address card changed

628	Not enough address space	Address card changed and now there are less addresses licensed than points configured
629	Address card tamper	The countdown after address card removal is finished, addresses are to be switched off
630	Fire internal	Internal fire, results from a usage type “FIRE_INT”
631	Error	Indicates an invalid value for a logical state since INVALID is used elsewhere in the system
632	Unknown	For state stor use only
633	internal use	Wild card
634	Configuration mismatch	Mismatch of network configuration (topology information)
635	Unknown item	Unconfigured item i.e. network node detected
636	Missing	Configured item i.e. network node NOT detected, for internal items currently trouble used
637	Incompatible software	Incompatible software detected for nodes in network
638	Incompatible network protocol	Incompatible network protocol version detected for nodes in network
639	internal use	
640	internal use	
641	Walktest Normal	
642	Walktest Fault	
643	Walktest Activate	
644	Walktest Activation failed	
645	Walktest On	
646	Walktest Off	
647	Walktest Alarm	
648	Bypass Normal	
649	Bypass Fault	
650	Bypass Activate	
651	Bypass Isolated Activation failed	
652	Bypass Alarm	
653	Isolate Normal	
654	Isolate Fault	
655	Isolate Activate	

656	Isolate Activation failed	
657	Isolate Alarm	
658	Normal Day Mode	
659	Fault Day Mode	
660	Alarm Day Mode	

Table 7.1: Appendix A.1 - State Table 1

7.2 Appendix A.2 - State Table 2

OPC Item Value	Description	LZ Name
0	Missing Zone	FG
1	Detector masking	MAD
2	Fade-out/Skip	ABL
3	Zone switch off	ABS
4	Detector test	TST
5	Stand-by/Control off	GE
6	Breakdonw centr. part	G8
7	Control On	STE
8	Malfunction ground	ES
9	Criterion -4	K4
10	Criterion -3	K3
11	Criterion -2	K2
12	Malfunction generic	G0
13	Emergency alarm	H1
14	Int-Fire	F3
15	Pre-Fire	F2
16	Ext-Fire (TU)	F1
17	Trigger disarmed	A6
18	Intern-Alarm	A5
19	Int-Sabotage	A4
20	Ext-Sabotage (TU)	A3
21	Ext-Intrusion (TU)	A2
22	Hold-up Alarm (TU)	A1
23	Ext-Malfunction.(TU)/Ext-Fire. (TU)	A0
24	Stand-by/Off	PE

25	On	P2
26	Acknowledgement	P3
27	Malfunction	P4
28	Malfunction power supply	P5
29	Switch Off	P6
30	Alarm verification	TEL
31	Address Blocking	ASP
32	Triggering generic	R-FG
33	Maint.-Stand-by OMM	R-GE
34	Maint.-Light Pollution	R-G0
35	Maint.-Heavy Pollution	R-G2
36	Maint.-Alarm OMM	R-AL
37	Maint.-Stand-by/Control Off	R-GE
38	Maint.-Breakdown Centr. Part	R-G8
39	Maint.-Control On	R-STE
40	Maint.-Malfunction Ground	R-ES
41	Maint.-Criterion-4	R-K4
42	Maint.-Criterion -3	R-K3
43	Maint.-Criterion -2	R-K2
44	Maint.-Malfunction	R-G0
45	Maint.-Emergency Alarm	R-H1
46	Maint.-Int-Fire	R-F3
47	Maint.-Pre-Fire	R-F2
48	Maint.-Ext-Fire	R-F1
49	Maint.-Triggering	R-A6
50	Maint.-Intern Alarm	R-A5
51	Maint.-Alarm Thermo (UGM)	R-A4
52	Maint.-Alarm Optics (UGM)	R-A3
53	Maint.-Ext-Intrusion (UGM)	R-A2
54	Pollution (UGM)	R-A1
55	Maint.-Malfunction-Ext	R-A0
56	Stand-by R-R/Max (UGM)	R-PE
57	Stand-by ThermoMax (UGM)	R-P2
58	Stand-by Optics (UGM)	R-P3

59	Alarm Pre-Level (UGM)	R-P4
60	Fire-Int Thermo (UGM)	R-P5
61	Fire-Int Optics (UGM)	R-P6
62	Fire-Ext Thermo (UGM)	R-TEL
63	Fire-Ext Optics (UGM)	R-ASP
64	Stand-by R-R/Max	GE-TD
65	Stand-by TMax	GE-TM
66	Stand-by Optics	GE-O
67	Stand-by Combi	GE-K
68	Light Pollution	V2
69	Heavy Pollution	V1
70	Heavy Pollution (Qty.)	V0
71	Alarm Pre-Level Ion	AV-I
72	Alarm Pre-Level Optics	AV-O
73	Alarm Pre-Level Thermo	AV-T
74	Alarm Pre-Level Combi	AV-K
75	Maint.-Alarm Optics	R-F1-O
76	Maint.-Alarm Thermo	R-F1-T
77	Maint.-Alarm Combi	R-F1-K
78	Fire-Ext Opt	F1-O
79	Fire-Ext Thermo	F1-T
80	Fire-Ext Combi	F1-K
81	Call Fire Brigade	FWR
82	Fire-Pre (TU)	F2-E
83	Fire-Int Opt	F3-O
84	Fire-Int Therm	F3-T
85	Fire-Int Combi	F3-K
86	Hold-up alarm with menace (TU)	A1-B
87		
88	Stand-by Day/Internal	T-GE
89	Periph. Control On	P8
90	Light Malfunction	G1
91	Line Malfunction	G2
92	End of Paper	PA

93	Triggering Disarmed	A7
94	Mains	Fault
95	Battery	Fault

Table 7.2: Appendix A.2 - State Table 2

Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Germany
www.boschsecurity.com