

**OPC Server for MICROS FIDELIO Hotel booking system**

**OPC-FIDE-TCP**

The OPC Server allows OPC Client systems to communicate with the Micros-Fidelio Hotel Booking System over TCP.

With the fully featured driver all relevant data regarding the room status, equipment and guest information can be shared between the building automation OPC Client system and the hotel booking system. The software driver comes complete with a logging facility, monitoring window overview page and engineering guidelines.



**ENGINEERING GUIDELINES**

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**Product ordering codes**

Fidelio OPC Server

OPC-FIDE-TCP

**Product Specification Summary**

The OPC Server software solution supports DA 2.0a, 3.0 and browser functions  
The solution was developed and tested by INTEGRATED using test programs supplied by FIDELIO FIAS 2.00.  
Tested Clients: MBS, MATRIKON, Sauter NOVAPRO OPEN, Citect 5.5 SCADA , Siemens DESIGO INSIGHT and DESIGO SX-OPEN

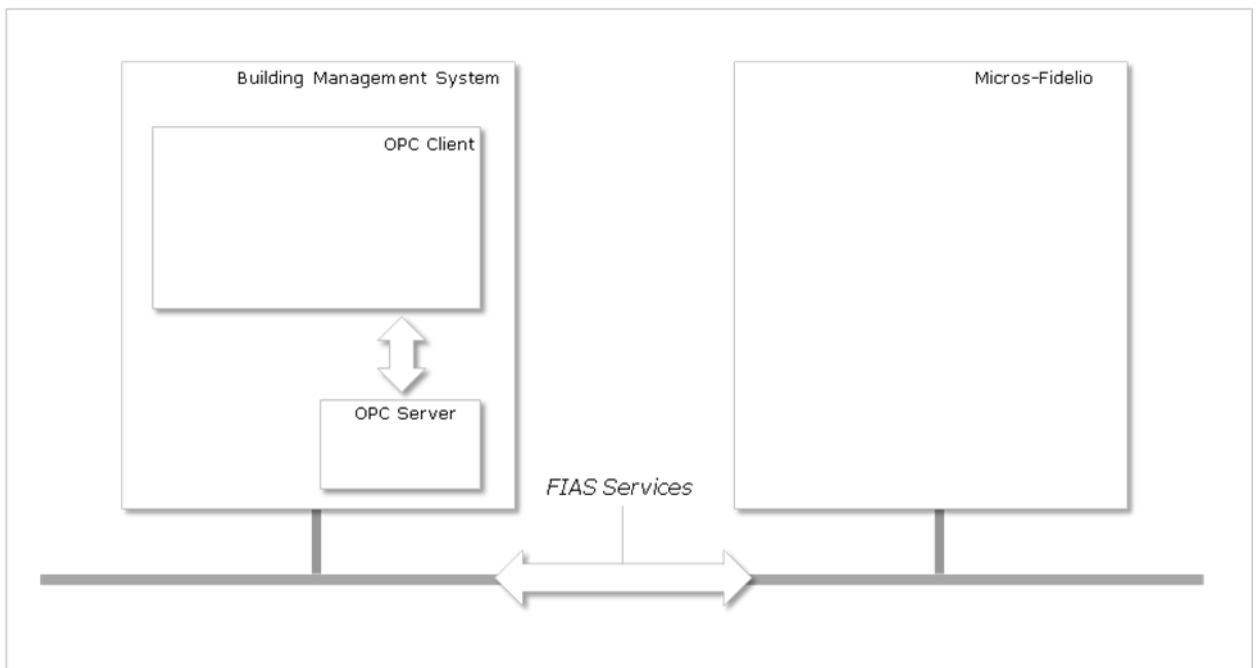
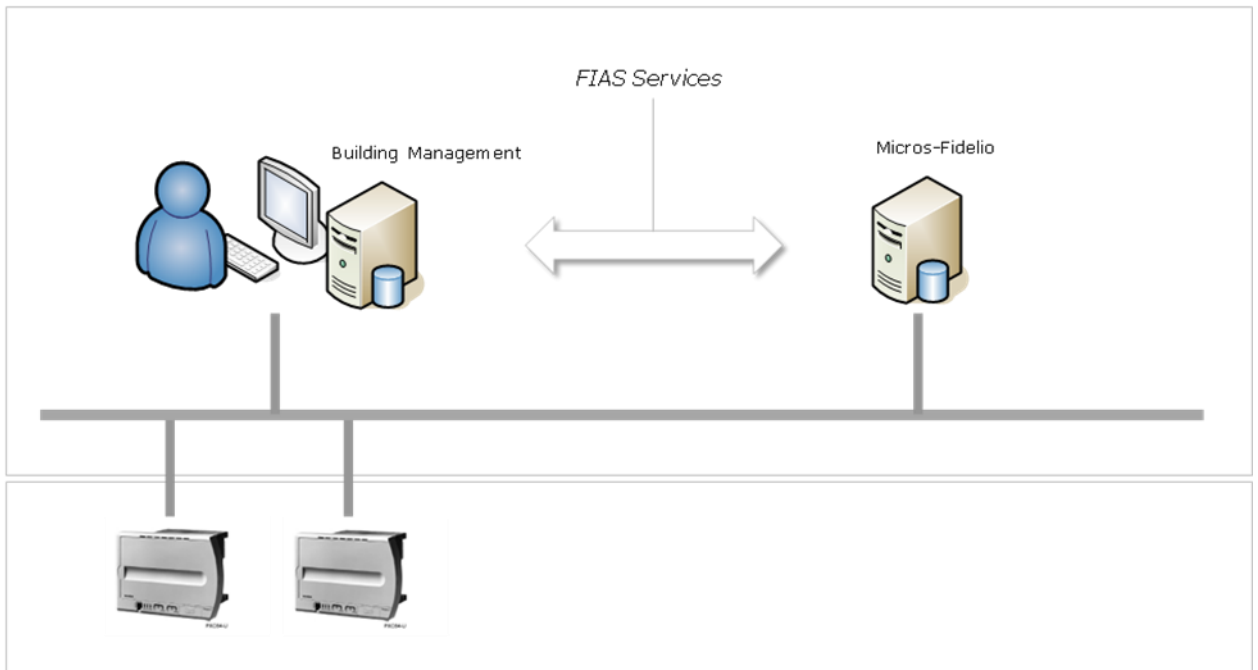
## 1 Introduction

The OPC Server for Fidelio software enables communications between the OPC Clients and the MICROS Fidelio Hotel Booking System over TCP. This documentation is provided to customers as a guideline for engineering the interface, detailing the required data points and mapping information.

## 2 System Topology Configurations

The MICROS Fidelio Hotel Booking system software runs on a PC and is connected to OPC Server and in turn the Building management system via the TCP Network. The OPC Client and Server is typically installed on the same machine.

### 2.1 OPC Client and Server



### 3 Functionality Overview

The Software Server from INTEGRATED passes information regarding the status of Hotel Rooms and equipment from the Fidelio to the OPC Server. Information regarding the room occupancy sent from Fidelio can, for example, be used to enable the Air conditioning, the lighting and the shutters in the specific room. Information regarding the state of the room, informing the OPC Clients that it needs cleaning or is being inspected can be used as part of the maintenance programme.

#### 3.1 Room Status

If a room defined in the Fidelio system database changes state, for example someone CHECKS-IN, a message will be sent to the OPC Server. If the room is CHECKED-OUT, another message will be sent to the OPC Server.

All rooms required to be mapped, as OPC TAGS must be entered into the OPC Server Database. On receipt of a message from the Fidelio Hotel Management System, the OPC Server will look-up the room and if it exists, will deal with the message accordingly.

Each Room mapped as an OPC TAG will have a value reflective of the Fidelio Hotel Booking System Room Status. More details regarding the status and the value are shown later in the document.

#### 3.2 Room Status Control

Rooms are also able to be set out of service by the OPC Client. This will prevent the Hotel Staff from booking the room. This is useful if maintenance work needs to be completed on the room.

#### 3.3 Room Status Pre Check in Message

Rooms are also able to be send pre-check in information 1 or two hours before expected arrival. This option is not supported by all Hotel Booking Systems. For more information contact INTEGRATED.

#### 3.4 Interface State Heartbeat

An Interface Heartbeat TAG is automatically generated to display the status of the communications to reflect the connection between the OPC Client and Server. More information regarding these tags are shown later in the document.

#### 3.5 Demo Mode

In the interested of software protection, the OPC Server for Fidelio supports a license key-code specific to the PC on which it is installed. Without this license key-code the OPC Server for Fidelio will run for 30minutes, after that time the OPC TAGS will not be updated.

The diagram below is an extract screen shot from an OPC Client. As can be seen from the values of the TAGS, the Communications with the Fidelio is not running.

Item ID	Acc...	Status	Value	Timestamp	Quality
ErrorMessage		Active	8	28/11/2005 15:06:37	Good, non-specific
ErrorTotalNo		Active	1	28/11/2005 15:06:37	Good, non-specific
InterfaceState		Active	0	28/11/2005 15:06:37	Good, non-specific
RN1		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN200		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN201		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN202		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN203		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN204		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN205		Active	-1	28/11/2005 15:06:31	Good, non-specific
RN206		Active	-1	28/11/2005 15:06:31	Good, non-specific

#### **4 Installing the Software**

If the OPC Server for Fidelio is supplied as a software package without hardware, please follow the simple installation procedure below:

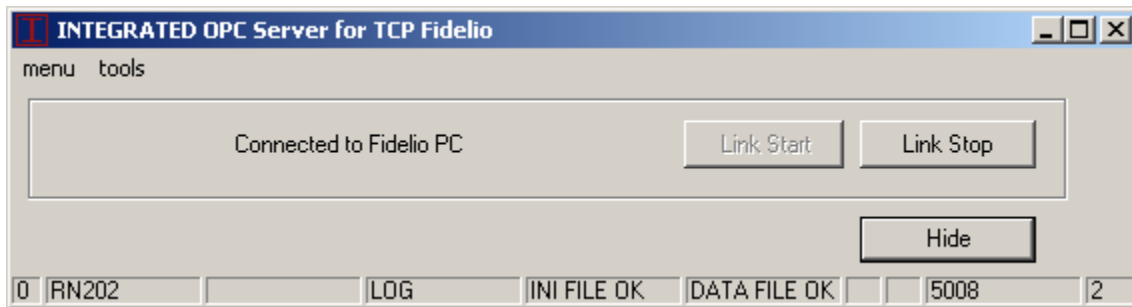
- Unzip the Files to a temporary directory.
- If necessary for the target PC, run the OPC Core components.msi from windows and follow the messages on the screen. Install the software onto the default directory. When successfully complete continue to next step.
- For the Server installation, run the setup.exe program from windows and follow the messages on the screen. Install the software onto the default directory. When successfully complete continue to next step.
- You are now ready to configure the OPC Server for Fidelio to suit the Site requirements. For this, move to the next section OPC Server for Fidelio Configuration.

## 5 OPC Server Windows

From the Start Menu, select program files, integrated and then Fidelio OPC Server. You should then see the following window:

### 5.1 OPC Server main Window

The OPC Server main window highlights the communications status and allows manual start/stop of the Communications with the Micros Fidelio Hotel Booking System.



The bottom tool bar displays the following information:

Clients	details the number of OPC clients connected
Check-in	details of the last check in message received from the Fidelio Hotel Booking System.
Check-out	details of the last check-out message received.
LOG	displays if the logging function is enabled or disabled.
INI File	displays the status of the configuration file
DATA file	displays the status of the data file
ErrorMsg	displays the last error message. A table at the end of the document explains the values.
ErrorTotal	displays the total number of errors since the last start.
Port	displays the communications port. Hover over it and you will see the IP Address.
Heartbeat	displays a counter for the Server.

Commands - start and stop of the communications with Fidelio - not normally needed

Hide – this will hide the main form. It can be opened again from the system tray icon

### 5.2 OPC Server menu options

The menu option at the top of the OPC Server window includes the options



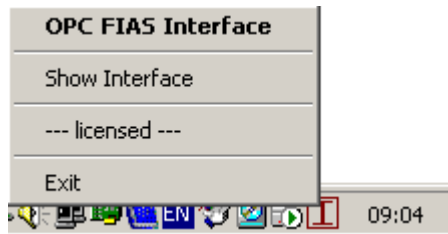
Enable monitor	this open up the protocol listening window.
Clear monitor	clears the screen of previous messages.
Register OPC	this is used for the first time the OPC Server is started manually.
Initialise OPC	this is used for the first time the OPC Server is started manually.
About	gives details of the version of the software.

### 5.3 OPC Server System Tray

The diagram below shows the letter I in the system tray. This is the icon representing the OPC Server for Fidleio.



Right Click on the icon and you will be presented with a small menu



## 6 Engineering the OPC Server

### 6.1 General Overview

The OPC Server comprises of a number of major components. These are installed automatically with the OPC Server, but will need editing for the site-specific details

**Configuration File [fidelioTCP.ini]** - this file is installed with the OPC Server and contains project specific information regarding the start-up and operation of the Server. The License key-code is also entered into this file. More information on the contents of this file are contained in the next chapters

**Data file [fidelioTCP.dat]** - this file contains the names of the Hotel rooms required for the interface. This must be edited to suit the project. The room detailed in this file are then created as OPC Tags. More information on the contents of this file is contained in the next chapters.

**Log file [FidelioTCP. log]** - this file, contains the logged information regarding the start-up and operation of the OPC Server.

## 6.2 Configuration Details

The file "Fideliotcp.ini" is a configuration utility used by the OPC Server on start-up. The file MUST be located in the root of C:\. By default this is part of the installation procedure.

```
! -----  
.license keycode  
Bx-xx-xx-xx-xx  
! -----  
! options : none, default 00-00-00-00-00  
! -----  
.leading  
  
! -----  
! options : max one character a-z, A-Z, default "F"  
! the TAG reference from Fidelio is used as the TAG name plus the text above, for example room number  
! text from Fidelio is RN202. the relevant TAG would then be FRN202 - use "" for no text addition  
! NOT SUPPORTED IN THIS VERSION  
! -----  
.log file  
y  
! -----  
! options : Y or N, default N  
! the communications log file details the citect driver events such as startup, writing errors,  
! room actions and other errors. the file is fidelio.log and is stored in the project directory.  
! -----  
.monitor  
n  
! -----  
! options : Y or N, default Y  
! the system will automatically open the monitoring window to show the  
! communications between the OPC Server and the Fidelio System  
! -----  
.autostart  
n  
! -----  
! options : Y or N, default Y  
! the system will automatically register the OPC server, initialise the system and begin  
! communications with the bus  
! -----  
.port  
5008  
! -----  
! options : 1 to 9, default 1  
! specify the communications port that the OPC server will use to connect to the  
! Fidelio System  
! -----  
.server  
192.168.1.150  
! -----  
! options : the IP Address  
! specify the server IPaddress that the OPC server will use to connect  
! -----  
.re  
n  
! -----  
! options : y or n  
! Enable or disable the Room Equipment Command  
! This feature was added into v106 TCP  
! -----
```

### 6.3 Database Details

The file "fidelioTCP.dat" is a database used by the OPC Server on start-up. The file MUST be located in the C:\Root. By default this is part of the installation procedure.

The OPC Server creates a list of OPC Tags to represent the Rooms. The extract of the file below details how the reference is made. Each room is entered into the list with a pretext 'RN' plus the number of the room as defined by the Fidelio Hotel Booking system. For example Room 201 is entered into the list as RN201

If rooms are not entered into this database, they will not be generated, as OPC TAGS and messages from Fidelio regarding the state of the room will be ignored.

```
! -----  
! Fidelio.dat  
!  
! database file for OPC Servers  
!  
! author      : Stephen Wreford www.integrated.ch  
!  
! date        : Sept 2004  
! Product Code : OPC-FIDE-TCP  
! version     :  
! -----  
RN1  
RN2  
RN3  
RN4  
RN201  
RN202  
RN203  
! -----  
! END of FILE
```

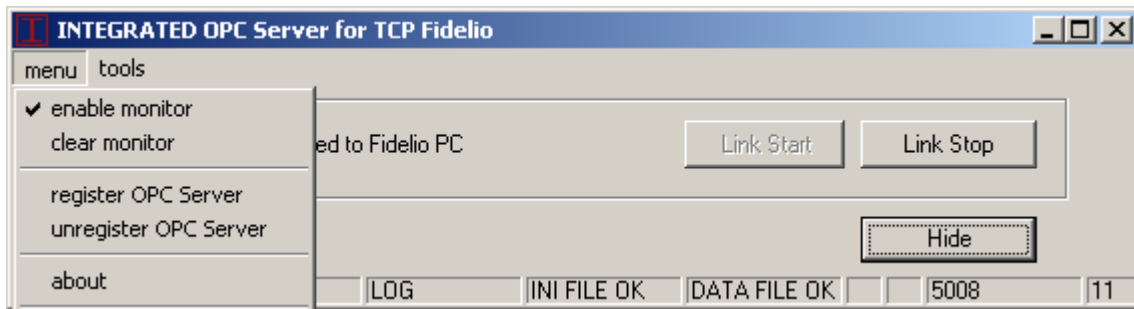
Remember - any changes to the dat file will not be recognised until after the Server has been restarted



## 6.4 Running the Server the First Time

The Database and configurations have now been completed. The following MUST be completed the first time the server is run.

From the Start menu in windows select the programs/integrated/Fidelio OPC Server and the software will automatically run showing the 'OPC Server for Fidelio' Window. Go to the pull down menu on the Fidelio Server window and select the following - REGISTER OPC SERVER. This will register the OPC Server onto the PC allowing OPC Clients to view the Server.



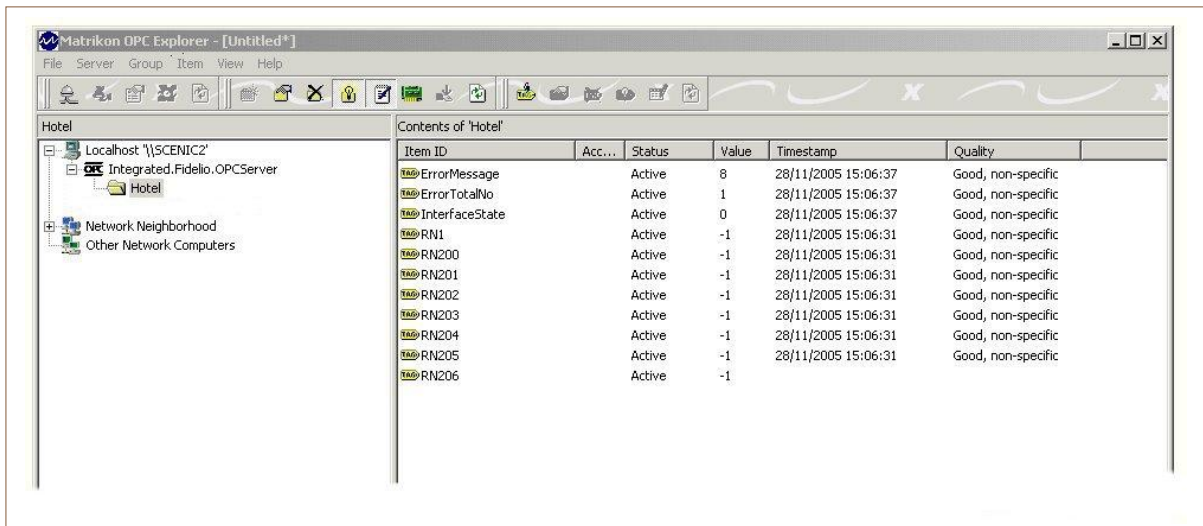
Auto-run can now be enabled [in the fidelio.ini file] if required for the next start.

## 6.5 Running the communications automatically

To allow the OPC Server for Fidelio to run automatically, edit the Configuration file for Auto-run 'enabled' and monitor open 'yes'. Restart the OPC Server and ensure the operation.

## 6.6 Using and Understanding the values

Now that the interface is communicating we need to understand what the information is. The diagram below is the extract from the OPC Client we saw previously in the documents.



## 6.7 Error Message, ErrorTotalNo

The Error Status Tags automatically created. The table below details the values and their meanings.

Tag Name	Value	Description
Error Message	-1	The Server has not yet started up successful communications
	1..13	The last error recorded - See the Error List.
Total Errors	-1	The Server has not yet started up successful communications
	0..255	Counts up the number of errors since the last start

## 6.8 Interface State Heartbeat

The Interface State TAG is automatically created

Tag Name	Value	Description
InterfaceState	-1	The Server has not yet started up successful communications
	0..255	Healthy communications when value increments 1 per minute.

## 6.9 Room TAGS

The following information details the TAGs and their actual possible values or states.

Tag Name	Value	Description
Room Status	-1	The Server has not yet received a message for this room
	0	Unoccupied
	1	Occupied

## 6.10 Log of Operations

In order to ensure recorded information, a logging facility is included with the solution. This feature can be enabled or disabled as required [see the chapter configuration settings]. Below is an extract of the file. It is used to monitor the start-up of the communications, any errors in engineering and to note changes in the database such as a guest checking in.

### 6.11 Log File

```

070214 151438 Fidelio OPC Server TCP Option. version xxx
070214 151439 -----
070214 151440 Serial Number : xxxxxxxxxxxxxxxxxxxxxxxxx
070214 151440 KeyCode Number: Bx-xx-xx-xx-xx
070214 151440 KeyCode OK
070214 151440 KeyCode Accepted
070214 151440 -----
070214 151440 Configuration Complete. Press Start to Connect
070214 151443 Startup the communications - manual switch
070214 151444 Testing For Connection
070214 151447 Connected to host
070214 151447 MarkAsConnected
070214 151447 Successful Configuration
070214 151449 ---> LS LinkStart sent to Fidelio
070214 151450 ---> LD LinkDescription sent to Fidelio
070214 151451 ---> LRGI
070214 151452 ---> LRGO
070214 151453 ---> LA LinkAlive sent to Fidelio
070214 151454 --> DR Database Sync sent to Fidelio
070214 151458 <-- LA
070214 151502 <-- DS Database
070214 151503 <-- CheckIn
070214 151503 Check-in : RN201
070214 151504 <-- CheckIn
070214 151504 Check-in : RN202
070214 151504 DatabaseSync Complete
070214 151716 Exiting Program via Menu

```

### 6.12 Demo Mode

In the interested of software protection, the OPC Server for Fidelio supports a license key-code specific to the PC on which it is installed. Without this license key-code the OPC Server for Fidelio will run for 30minutes, after that time the OPC TAGS will not be updated.

## 7 Appendix : Fidelio supported functions

The Software driver has implemented and automatically supports the following functions from Fidelio:

<u>Shortcode</u>	<u>Description</u>	<u>Use</u>
LS	link start	part of start up.
LA	link alive	part of start up.
LE	link end	option for stopping comms.
DS	database sync	part of start up.
GI	guest in	mapped to TAG.
GO	guest out	mapped to TAG.

For information regarding the mapping of the Fidelio information to TAGs see chapter TAG Data-point Mapping.

## 8 Appendix : TAG Data-point type

The driver on start-up and on any change receives the Fidelio room allocation and status information. This information is generated from the FIDLEIO.DAT file and the relevant OPC TAGs.

<u>Data point description</u>	<u>Fidelio Text</u>	<u>OPC TAG text</u>	<u>Data Type</u>
Room Status	RNxxx	RNxxx	byte
Room Control	RNxxx	RNxxx_RE	byte
Communication Status		FidComm	byte
Error Message		Error Message	byte
Total Errors		Total Errors	byte

## 9 Appendix : Error Message Table

<u>Error Number</u>	<u>Description</u>	<u>Notes</u>
00	Normal	all ok
01	KeyCode	check licensing number and PC serial number
02	Port Open Fail	check ini file reference for port number
03	No Comms	check port number, cable, and Fidelio Software
04	CRC Failure	if increasing check cable installation
05	Port error	contact support
08	No Comms	check port number, cable, and Fidelio Software
09	INTERNAL	contact support
10	error loop count	check other errors
11	receive NAK	check other errors
12	unrecognised frame	restart

## 10 Appendix : Cabling

The TCP Version uses the TCP network to communicate with Fidelio.

## 11 Appendix : Key Code

In order to protect the driver from piracy a key-code algorithm has been included. On start-up the Driver will review the Main Hard Disk System Serial Number against the key code entered in the INI File. If the key-code is correct the driver will start and the communications will begin.

If the key-code is incorrect the OPC Server for Fidelio will run for 30minutes in DEMO mode.

On start-up the driver will write the Serial Number and the Key-Code to the LOG File.  
If you do not already have the key-code please contact INTEGRATED with the Serial Number.

## 12 Appendix : Supported Operating Systems

Currently the solution has been tested on the following Operating Systems:

<u>Operating System</u>	<u>Version</u>	<u>Notes</u>
Windows 2000	service pack 4	professional version
Windows XP	service pack 2	professional version

## 13 Appendix : Supported and Tested Clients

The Fidelio OPC Server has been successfully tested with the following OPC Clients :

<u>Product Name</u>	<u>Version</u>	<u>Notes</u>
MBS OPC Explorer		
MATRIKON OPC Explorer		
Citect SCADA	5.5	
Sauter NOVAPro OPEN		
Siemens DESIGO INSIGHT	2.35	
Siemens SX OPEN		