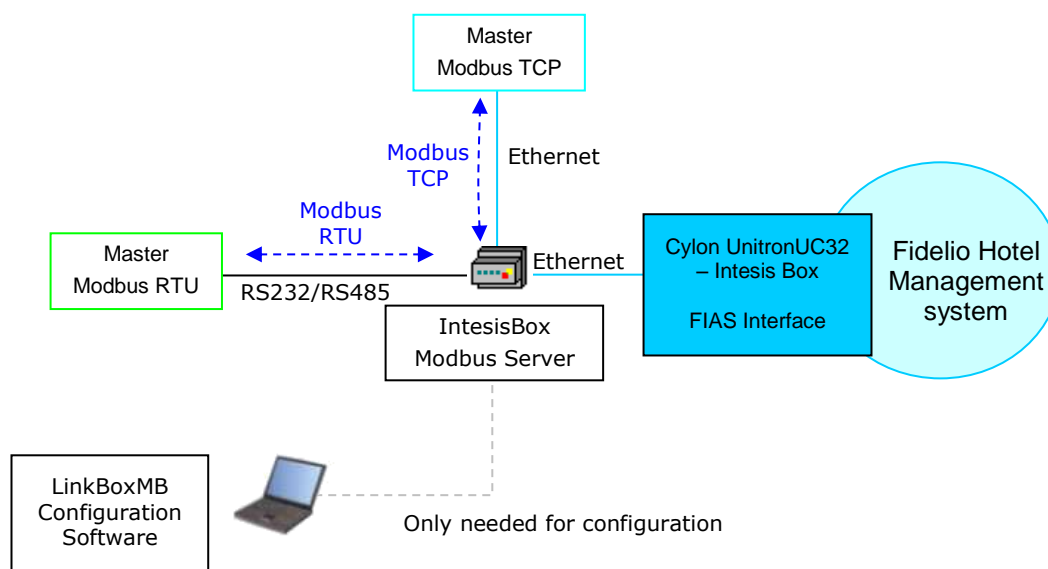# IntesisBox®
Modbus Server – Fidelio IP

Gateway for integration of Micros Fidelio Hotel management system into Modbus (RTU and TCP) enabled control systems.

Integrate your Micros Fidelio Hotel management system into your Modbus master device or system (SCADA, BMS, PLC, HMI, TouchPanels…).

Monitor & Control your Micros Fidelio Hotel management system from your Control Center using any commercial SCADA or monitoring software with Modbus driver.

IntesisBox allows Modbus TCP (Ethernet) or Modbus RTU (RS232 or RS485) communication, configurable by software. *IntesisBox is a server device in case of Modbus TCP communication, or a slave device in case of Modbus RTU communication.*

IntesisBox connects to the FIAS interface of the Hotel Management system using a TCP/IP connection.

Monitoring of the room state (checked in/out) through independent Modbus registers. The value in the Modbus register indicates the state of the room the state.

Fixed Modbus address map. The register number identifies the room. Simple configuration, no point's configuration needs to be entered, just the communication parameters (IP address, baud rate…). Up to 1500 rooms are supported
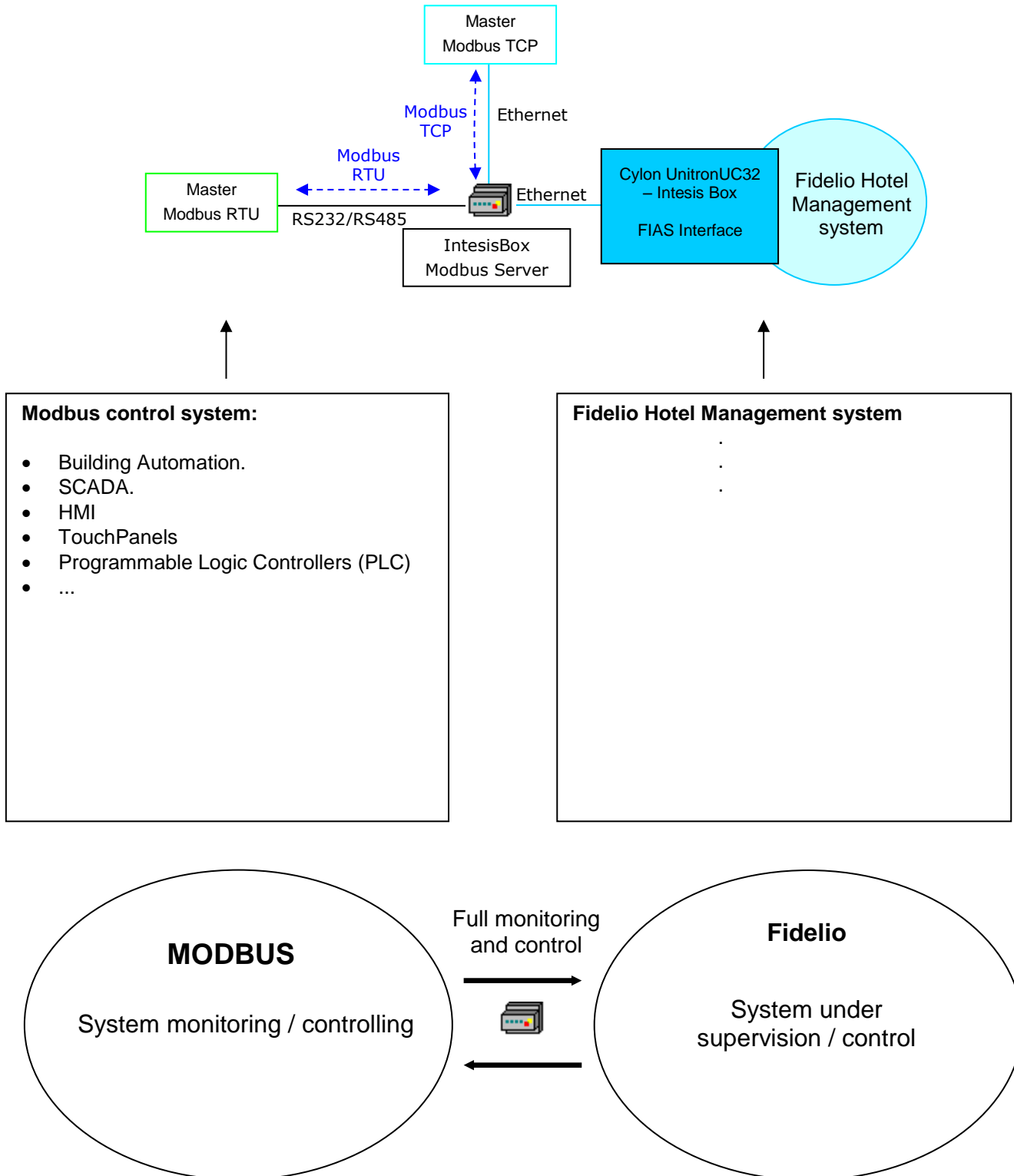
IntesisBox Modbus Server series are configured using *LinkBoxMB,* a software tool for windows™ which is supplied along with the purchase of IntesisBox with no additional cost. *The user interface of LinkBoxMB allows simulating the values of the Modbus registers without the need to be connected to the Hotel Management system, very useful while in commissioning phase.*

URL	http://www.intesis.com
email	info@intesis.com
tel	+34 938047134

1. Description

IntesisBox Modbus Server for integration of Micros Fidelio Hotel management system	

Order Code	Description
IBOX-MBS-FIDELIO_IP	This gateway allows integration of Micros Fidelio Hotel management system into a Modbus master device or system. The gateway acts as a Modbus slave device. Main features • Software for configuration and test is supplied with the gateway. • Through the user interface, it is allowed to simulate the status of the Modbus registers without the need to be connected to the Fidelio system • Allows to be mounted on DIN rail, wall or desktop. • Power from 9 to 30Vdc or 24Vac (Power supply supplied) Modbus features • Modbus TCP or • Modbus RTU over RS232 or RS485 selectable. • Parameters configurable: IP address, slave number, baud rate, etc. • Modbus functions supported: 03 & 04 for read, 06 for write. • The Modbus registers are all Unsigned Int, read only • Modbus registers from 1 to 1500 can be used. • Each Modbus register is the status of a single room Fidelio features • Connected over TCP/IP • Needs the FIAS interface • Up to 1500 rooms can be supervised

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2. Sample applications

Integration of Fidelio's Hotel management system in any control systems.

Master
Modbus TCP

Modbus
TCP   Ethernet

Modbus
RTU

Master   Ethernet   Cylon UnitronUC32   Fidelio Hotel
Modbus RTU   RS232/RS485   – Intesis Box   Management
                                                                 system
                              IntesisBox   FIAS Interface
                              Modbus Server

Modbus control system:

- Building Automation.
- SCADA.
- HMI
- TouchPanels
- Programmable Logic Controllers (PLC)
- ...

Fidelio Hotel Management system
.
.
.

MODBUS

System monitoring / controlling

Full monitoring
and control

Fidelio

System under
supervision / control

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3. Typical application

Monitor & Control of Fidelio's Hotel management system from a Control Center using any commercial SCADA or monitoring software with Modbus TCP driver.

```
┌─────────────────┐
│     SCADA       │
│                 │           LAN
│  with Modbus TCP│           WAN
│  master driver  │           INTERNET
└─────────────────┘
                         Modbus
                          TCP      Ethernet

                                    RS232     ┌──────────────┐
                                              │ Fidelio Hotel│
                                              │ management   │
                                              │ system       │
                                              └──────────────┘
```

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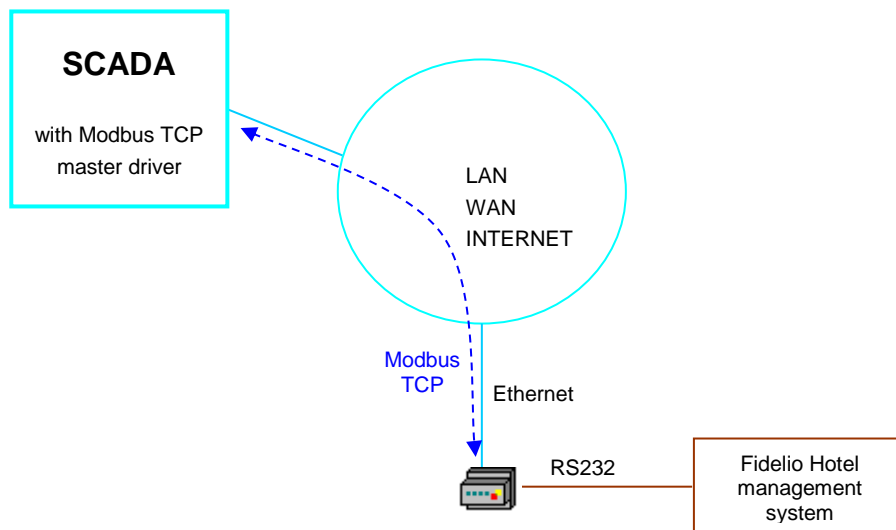
4. Modbus interface of IntesisBox

Description

IntesisBox acts as a slave device in its Modbus interface, this interface can be the Ethernet port (if using Modbus TCP), or the RS232 port or the RS485 port (if using Modbus RTU). To access the points of the IntesisBox from Modbus system, you must specify as the Modbus register addresses those configured in the LinkboxMB.

Register's addresses and values

The Modbus registers to be used with the IntesisBox Modbus Server – FIDELIO IP gateway are all Unsigned Int, read only and the values from 1 to 1500 can be used.

The allowed values of the Modbus registers are:

- • 0: room in check-out status

- • 1: room in check-in status

There is a communication error register showing the communication status of the IntesisBox with the Fidelio system with the values:

- • 0: Communication OK

- • 1: Error in the communication

Functions supported

Modbus functions 03 and 04 (read holding registers and read input registers) can be used to read Modbus registers.

If poll records are used to read more than one register, it is necessary that the range of addresses requested contains valid addresses; if not the corresponding Modbus error code will be returned.
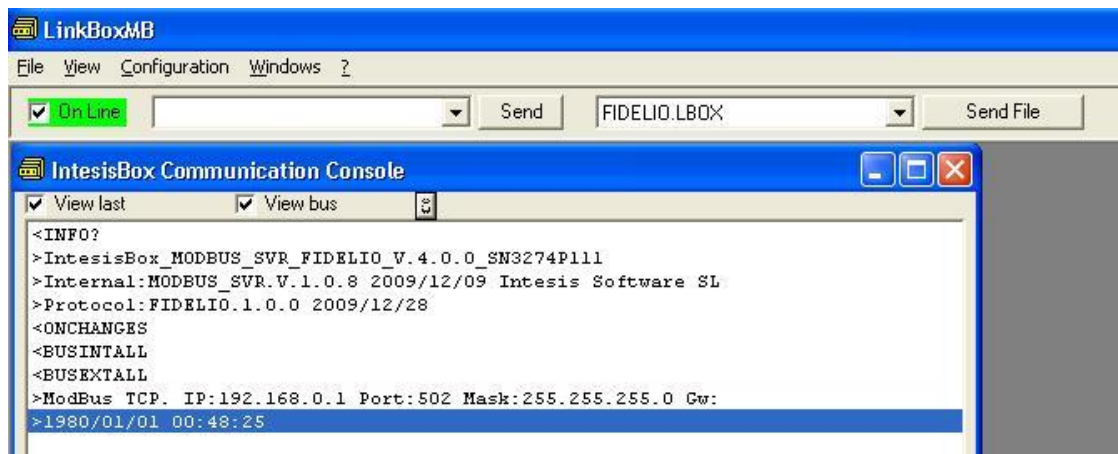
Modbus error codes are fully supported, they will be sent whenever a non valid Modbus action or address is required.

5. Fidelio interface of IntesisBox

The IntesisBox connects to the Fidelio system, using TCP/IP. More concretely, to the FIAS interface to get the updates of the room status. Also it can re-synchronize with the current status of all the rooms. It allows to supervise the status (checked in / checked out) of up to 1500 rooms.

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6. Configuration tool

LinkBoxMB	• Visual engineering tool, easy of use, for gateway's configuration and supervision compatible with Microsoft Windows operating systems, supplied with the gateway free of charge. • Multi-window tool allowing to supervise simultaneously the communication activity with both protocols (systems), real time values for all the signals allowing to modify any value (very useful for test purposes), console window showing debug and working status messages, and configuration windows to configure all the gateway's parameters and signals. • Signals configuration in plain text files (tab separated) for easy and quick configuration using Microsoft Excel (very useful in projects with a lot of points). • Allows configuring the gateway's parameters and signals while in off-line (not connected to the gateway). • Connection to the gateway for download the configuration and supervision by using serial COM port of the PC (serial cable supplied with the gateway). • Allows configuring all the external protocols available for IntesisBox® Modbus Server series. • Upgrades for this software tool available free of charge whenever a new protocol is added to the IntesisBox® Modbus Server series. • Multi-project tool allowing having in the engineer's PC the configuration for all the sites with different IntesisBox® Modbus Server series gateways. • Multi-language tool, all the language-dependent strings are in a plain text file (tab separated) for easy modification or addition of new languages. • A list of system commands is available to send to the gateway for debugging and adjust purposes (Reset, Date/time consultation/adjust, Firmware version request…).

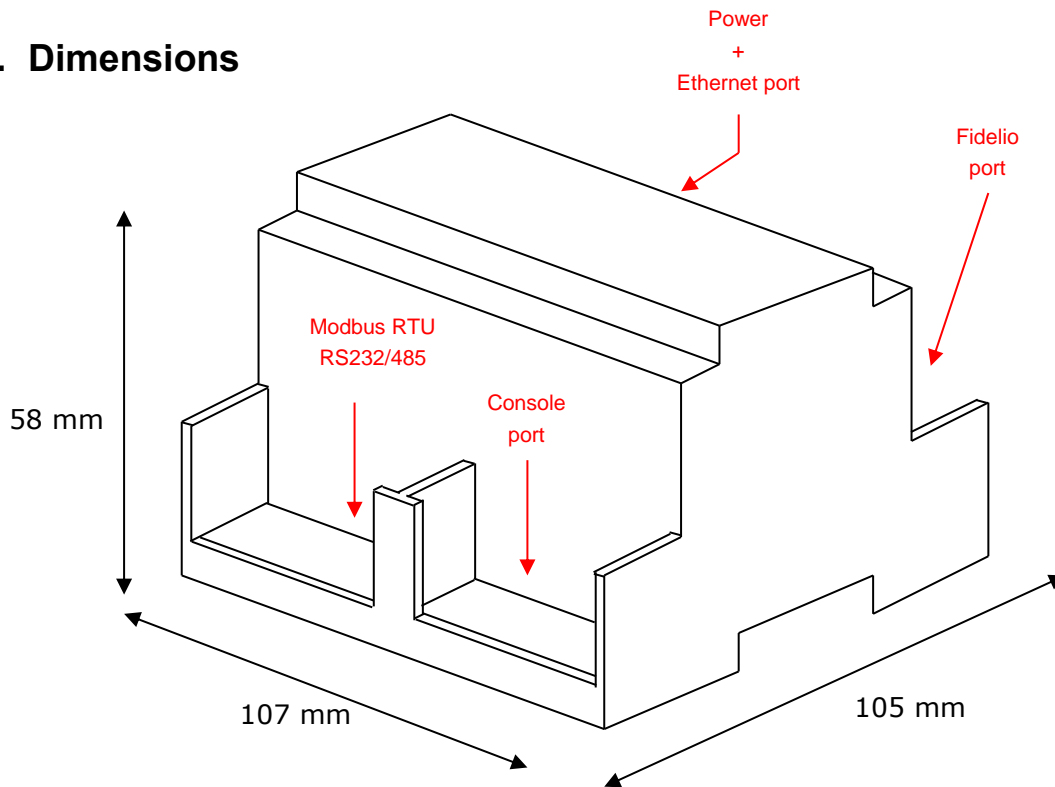URL   http://www.intesis.com
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7. Mechanical & Electrical characteristics

Enclosure	Plastic, type PC (UL 94 V-0). Dimensions: 107mm x 105mm x 58mm.
Colour	Light Grey. RAL 7035.
Power	9 to 30Vdc +/-10%, Max.: 125mA. 24Vac +/-10% 50-60Hz, Max.: 127mA Must use a NEC Class 2 or Limited Power Source (LPS) and SELV rated power supply. Plug-in terminal block for power connection (2 poles).
Terminal wiring (for power supply and low-voltage signals)	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: $0.5mm^2$… $2.5mm^2$ 2 cores: $0.5mm^2$… $1.5mm^2$ 3 cores: not permitted
Mounting	Wall. DIN rail EN60715 TH35.
Modbus RTU ports	1 x Serial EIA232 (DB9 male DTE). SELV 1 x Serial EIA485 (Plug-in screw terminal block 2 poles). SELV
Modbus TCP and FIDELIO (TCP/IP)	1 x Ethernet 10Base-T RJ45.
LED indicators	1 x Power. 2 x Modbus RTU serial port activity (Tx, Rx). 2 x Ethernet port link and activity (LNK, ACT).
Console port	EIA232. (DB9 female connector, DCE). SELV
Configuration	Via console port.[1]
Firmware	Allows upgrades via console port.
Operational temperature	0°C to +70°C
Operational humidity	5 to 95%, non condensing
Protection	IP20 (IEC60529).
RoHS conformity	Compliant with RoHS directive (2002/95/CE).
Norms and standards	CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC) EN 61000-6-2, EN 61000-6-3, EN 60950-1, EN 50491-3

[1]   Standard cable DB9male-DB9female 1,8 meters long is supplied with the device for connection to a PC COM port for configuring and monitoring the device. The configuration software, compatible with Windows® operating systems, is also supplied.

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8. Dimensions

Power
+
Ethernet port

Fidelio
port

Modbus RTU
RS232/485

Console
port

58 mm

107 mm

105 mm

Recommended available space for its installation into a cabinet (wall or DIN rail mounting), with space enough for external connections

100 mm

115 mm

130 mm

Intesis software

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