PREVIDIA

GameOver

FIRE DETECTION AND EXTINGUISHANT SYSTEMS

GUIDE FOR INTEGRATION
WITH SUPERVISION SYSTEMS

inim
ELECTRONICS

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Chapter 1

General information

1.1   Manufacturer's details

Manufacturer: INIM ELECTRONICS s.r.l

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The persons authorized by the manufacturer to repair or replace the parts of this system, hold authorization to work on INIM Electronics brand devices only.

1.2   About this manual

Manual code: DCMBINE0PREVIDIA

Version: 1.10

This manual provides the installer with the guidelines relating to the integration of Previdia control panels with external supervision systems.

1.2.1 Graphic conventions

Following are the graphic conventions used in this manual.

| Conventions	Example	Description
Text in italics	Refer to *paragraph 1.2.1 Graphic conventions*	Indicates the title of a chapter, section, paragraph, table or figure in this manual or other published reference
[Uppercase letter] or [number]	[A] or [1]	Reference relating to a part of the system or video object.

Note: *The notes contain important information relating to the text.*

Chapter 2

Connectible external systems

Previdia series control panels have been especially developed and designed for connection to various systems which are external to the fire detection system itself, such as:

- **BMS (Building Management System)**: supervision systems, usually comprising software installed on a PC platform, capable of supervising and managing the system through graphic maps, function keys, etc. These systems constitute an easy-to-use interface for end users.

- **Pager**: systems comprising a PABX capable of receiving text messages from other systems (in our case from fire-detection control panels) and forwarding them to remote devices such as pagers or displays of cordless telephones.

- **Video surveillance with IP cameras with Onvif protocol**: cameras installed in the same Ethernet network can be interconnected with the fire-detection control panel in order to provide images captured in ambients where dangerous situations have been detected (in the case of PTZ bu positioning the camera at the correct angle).
  The images, visible on the control-panel console or from remote locations (via e-mail or web browser), provide a valid verification tool that allows the user to establish the seriousness or irrelevance of fire signalling.

- **Voice Evac**: voice evacuation systems comprise one or more control units (controller, amplifiers, power supplies) and a series of sound diffusion lines.
  These systems have the task of warning occupants of the necessity to evacuate the building and are more effective that sounders, as they are capable of providing detailed information regarding the fire.
  The interconnection of these systems and the fire detection system allows the activation of accurate voice messages relating specifically to the various zones in the building.

Chapter 3
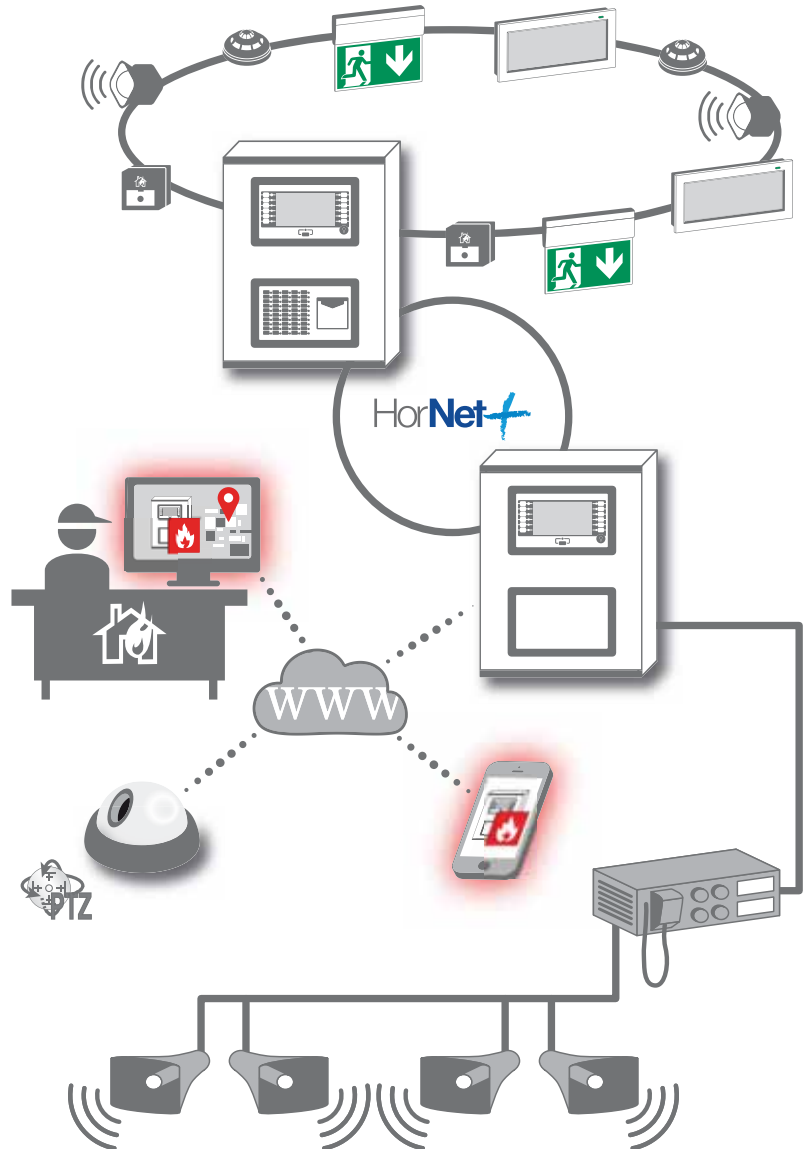
Building Management System

The connection of Previdia control panels with supervision systems (BMS, Building Management Systems) allows users to supervise and interact with their systems.

For this purpose Previdia control panels manage some of the most widely used communication protocols available on the market:

- **Modbus RTU**: protocol based on RS485 standard (for Previdia Max control panels only, available on the RS485-BMS port of the FPMCPU module)
- **Modbus over TCP/IP**: Modbus protocol based on TCP/IP standard, implemented on the Ethernet connection of the control panel
- **BACnet**: protocol based on TCP/IP standard (for Previdia Max control panels only, implemented on the Ethernet port of the IFMLAN module). This protocol is subject to licencing.
- **SmartLook interface**: protocol property of Inim Electronics used by SmartLook software (implemented on the Ethernet port, RS232 and USB located on the FPMCPU module for Previdia Max control panels and on the Ethernet and USB ports located on the Previdia Compact control panels main board)

Following are the specifications of each of the previously-mentioned protocols.

3.1   Modbus RTU and Modbus over TCP/IP

A BMS software framework connected to a Previdia control panel via Modbus protocol, capable of supervising and managing the control panel itself and all the control panels interconnected with it through the Hornet+ network (for further details regarding Hornet+ networking refer to the Praesidia networking guide).

For this reason it is necessary to configure a Modbus address for each control panel to be reached.

This setting must be done through the configuration software Previdia/Studio.

1. Open the Previdia/Studio solution that represents the system.
2. Select, from the control panels configured in the network, the control panel the BMS is connected to (via TCP/IP or RS485).
3. Access to the control panel CPU programming section:

    for Previdia Max: Click first on the FPMCPU module icon and then on the display.

    for Previdia Compact: Click first on the display.

    for PREVIDIA-C-REP: You access directly to the section of interests.

4. The section shows the **Modbus address** button. Click on the button.

For each of the control panels connected in the Hornet+ network, the software will allow you to set on the Modbus the address to which to respond. If you select the "No Address" setting the control panel in question will not respond to Modbus commands (protocol disabled).

Note: *Modbus RTU and Modbus TCP/IP protocols are available and are not subject to an activation licence.*

The Previdia control panel carries out the following commands via the Modbus:

- READ REGISTER
- SET COIL

3.1.1 Register Mapping

The "READ REGISTER" command serves to interrogate the control panel in relation to its status and the status of its connected components in accordance with the register mapping as shown below:

Address	Name	High byte								Low byte							
		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Control panel details Status 1						Investigate	Mute	Night mode				Disabled	Fault	Early warning	Pre-alarm	Alarm
1	Control panel details Status 2												RT network	Fault fault		Low battery	Fault fault
2	Modules fault	Module fault IFMDIAL	Module fault IFMNET	Fault emergency backup CPU	Module fault IFMLAN	Module fault IFM16IO 4	Module fault IFM16IO 3	Module fault IFM16IO 2	Module fault IFM16IO 1	Module fault IFM2L 8	Module fault IFM2L 7	Module fault IFM2L 6	Module fault IFM2L 5	Module fault IFM2L 4	Module fault IFM2L 3	Module fault IFM2L 2	Module fault IFM2L 1
3	Module fault IFMEXT 1-16	Module fault IFMEXT 16	Module fault IFMEXT 15	Module fault IFMEXT 14	Module fault IFMEXT 13	Module fault IFMEXT 12	Module fault IFMEXT 11	Module fault IFMEXT 10	Module fault IFMEXT 9	Module fault IFMEXT 8	Module fault IFMEXT 7	Module fault IFMEXT 6	Module fault IFMEXT 5	Module fault IFMEXT 4	Module fault IFMEXT 3	Module fault IFMEXT 2	Module fault IFMEXT 1
4	Module fault IFMEXT 17-24									Module fault IFMEXT 24	Module fault IFMEXT 23	Module fault IFMEXT 22	Module fault IFMEXT 21	Module fault IFMEXT 20	Module fault IFMEXT 19	Module fault IFMEXT 18	Module fault IFMEXT 17
5	Module fault IFM4IO	Module fault IFM4IO 16	Module fault IFM4IO 15	Module fault IFM4IO 14	Module fault IFM4IO 13	Module fault IFM4IO 12	Module fault IFM4IO 11	Module fault IFM4IO 10	Module fault IFM4IO 9	Module fault IFM4IO 8	Module fault IFM4IO 7	Module fault IFM4IO 6	Module fault IFM4IO 5	Module fault IFM4IO 4	Module fault IFM4IO 13	Module fault IFM4IO 2	Module fault IFM4IO 1
6	Fault modules fault					Module fault IFM24I60 4	Module fault IFM24I60 3	Module fault IFM24I60 2	Module fault IFM24I60 1		Module fault FPMLED 7	Module fault FPMLED 6	Module fault FPMLED 5	Module fault FPMLED 4	Module fault FPMLED 3	Module fault FPMLED 2	Module fault FPMLED 1
7	Module fault IFM4R	Module fault IFM4R 16	Module fault IFM4R 15	Module fault IFM4R 14	Module fault IFM4R 13	Module fault IFM4R 12	Module fault IFM4R 11	Module fault IFM4R 10	Module fault IFM4R 9	Module fault IFM4R 8	Module fault IFM4R 7	Module fault IFM4R 6	Module fault IFM4R 5	Module fault IFM4R 4	Module fault IFM4R 3	Module fault IFM4R 2	Module fault IFM4R 1
8	Active Timers 1	Timer 16	Timer 15	Timer 14	Timer 13	Timer 12	Timer 11	Timer 10	Timer 9	Timer 8	Timer 7	Timer 6	Timer 5	Timer 4	Timer 3	Timer 2	Timer 1
9	Active Timers 2	Timer 32	Timer 31	Timer 30	Timer 29	Timer 28	Timer 27	Timer 26	Timer 25	Timer 24	Timer 23	Timer 22	Timer 21	Timer 20	Timer 19	Timer 18	Timer 17
10	Disabled Timers 1	Timer 16	Timer 15	Timer 14	Timer 13	Timer 12	Timer 11	Timer 10	Timer 9	Timer 8	Timer 7	Timer 6	Timer 5	Timer 4	Timer 3	Timer 2	Timer 1
11	Disabled Timers 2	Timer 32	Timer 31	Timer 30	Timer 29	Timer 28	Timer 27	Timer 26	Timer 25	Timer 24	Timer 23	Timer 22	Timer 21	Timer 20	Timer 19	Timer 18	Timer 17
12	Loop fault	Fault loop 16	Fault loop 15	Fault loop 14	Fault loop 13	Fault loop 12	Fault loop 11	Fault loop 10	Fault loop 9	Fault loop 8	Fault loop 7	Fault loop 6	Fault loop 5	Fault loop 4	Fault loop 3	Fault loop 2	Fault loop 1
13	Loop disabled	Loop 16 disabled	Loop 15 disabled	Loop 14 disabled	Loop 13 disabled	Loop 12 disabled	Loop 11 disabled	Loop 10 disabled	Loop 9 disabled	Loop 8 disabled	Loop 7 disabled	Loop 6 disabled	Loop 5 disabled	Loop 4 disabled	Loop 3 disabled	Loop 2 disabled	Loop 1 disabled

Registers for Previdia Max control panels (use Modbus 0x03 command to read)

Address	Name	High byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Low byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
20	Status of telephone communicator 1	Supervision failed	Call queue full	SMS fault	SMS OK	Fault call failed	Fault call OK	Alarm call failed	Alarm call OK	Fault call ongoing	Alarm call ongoing				GPRS Fault	PSTN Fault	GSM Fault
21	Status of telephone communicator 2														Info call disabled	Fault call disabled	Alarm call disabled
25	Fire extinguishment module 1									Fault	Automatic stop	Manual stop	Pre-extinguishment	Extinguishment	Manual disabled	Automatic disabled	Disabled
...	...																
48	Fire extinguishment module 24									Fault	Automatic stop	Manual stop	Pre-extinguishment	Extinguishment	Manual disabled	Automatic disabled	Disabled
49	Extinction module 1 terminals faults			Short circuit on HOLD	HOLD open	Short circuit on MAN.-EXT	MAN.-EXT open	Short circuit on PRESSOS.	PRESSOS. open	Short circuit on STOP-EXT	STOP-EXT open	Short circuit on PRE-EXT	PRE-EXT open	Short circuit on RELEASED	RELEASED open	Short circuit on VALVE	VALVE open
...	...																
72	Extinction module 24 terminals faults			Short circuit on HOLD	HOLD open	Short circuit on MAN.-EXT	MAN.-EXT open	Short circuit on PRESSOS.	PRESSOS. open	Short circuit on STOP-EXT	STOP-EXT open	Short circuit on PRE-EXT	PRE-EXT open	Short circuit on RELEASED	RELEASED open	Short circuit on VALVE	VALVE open
100	Zone 1 Zone 2	*Zone 2* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Zone 1* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
599	Zone 999 Zone 1000	*Zone 1000* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Zone 999* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm
600	Group 1 Group 2	*Group 2* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*Group 1* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm
...	...																
719	Group 239 Group 240	*Group 240* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*Group 239* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm

Registers for Previdia Max control panels (use Modbus 0x03 command to read)

Address	Name	High byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Low byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
868	IFM16IO 1 Module channels 1, 2	*IFM16IO 1 Module, channel 2* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*IFM16IO 1 Module, channel 1* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm
...	...																
899	IFM16IO 4 Module channels 15, 16	*IFM16IO 4 Module, channel 16* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*IFM16IO 4 Module, channel 15* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm
900	IFM4IO 1 Module channels 1, 2	*IFM4IO 1 Module, channel 2* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*IFM4IO 1 Module, channel 1* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
931	IFM4IO 16 Module channels 3, 4	*IFM4IO 16 Module, channel 4* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*IFM4IO 16 Module, channel 3* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
932	Module IFM4R 1 channels 1, 2	*IFM4R 1 Module, channel 2* Do not use	Do not use	Output status	Disabled	Do not use	Do not use	Do not use	Do not use	*IFM4R 1 Module, channel 1* Do not use	Do not use	Output status	Disabled	Do not use	Do not use	Do not use	Do not use
...	...																
963	Module IFM4R 16 channels 3, 4	*IFM4R 16 Module, channel 4* Do not use	Do not use	Output status	Disabled	Do not use	Do not use	Do not use	Do not use	*IFM4R 16 Module, channel 3* Do not use	Do not use	Output status	Disabled	Do not use	Do not use	Do not use	Do not use
964	IFM24160 1 output 1 output 2	*IFM24160 1 Module, output 2* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 1 Module, output 1* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use
965	IFM24160 1 Output 3 IFM24160 2 Output 1	*IFM24160 2 Module, output 1* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 1 Module, output 3* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use
966	IFM24160 2 Module output 2 output 3	*IFM24160 2 Module, output 3* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 2 Module, output 2* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use
967	IFM24160 3 Module output 1 output 2	*IFM24160 3 Module, output 2* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 3 Module, output 1* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use
968	IFM24160 3 Output 3 IFM24160 4 Output 1	*IFM24160 4 Module, output 1* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 3 Module, output 3* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use
969	IFM24160 4 output 2 output 3	*IFM24160 4 Module, output 3* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use	*IFM24160 4 Module, output 2* Do not use	Do not use	Output status	Disabled	Fault	Do not use	Do not use	Do not use

Address	Name	High byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Low byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1001	Loop 1 Address 1 Address 2	Loop1 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop1 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1120	Loop 1 Address 239 Address 240	Loop1 address 240 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop1 address 239 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1121	Loop 2 Address 1 Address 2	Loop 2 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 2 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1240	Loop 2 Address 239 Address 240	Loop 2 address 240 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 2 address 239 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1241	Loop 3 Address 1 Address 2	Loop 3 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 3 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1360	Loop 3 Address 239 Address 240	Loop 3 address 240 — Do not use	Do not use	Output s status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 3 address 239 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1361	Loop 4 Address 1 Address 2	Loop 4 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 4 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1480	Loop 4 Address 239 Address 240	Loop 4 address 240 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 4 address 239 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1481	Loop 5 Address 1 Address 2	Loop 5 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 5 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1600	Loop 5 Address 239 Address 240	Loop 5 address 240 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 5 address 239 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1601	Loop 6 Address 1 Address 2	Loop 6 address 2 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Loop 6 address 1 — Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																

Registers for Previdia Max control panels (use Modbus 0x03 command to read)

Address	Name	High byte								Low byte							
		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1720	Loop 6 Address 239 Address 240	Loop 6 address 240								Loop 6 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1721	Loop 7 Address 1 Address 2	Loop 7 address 2								Loop 7 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1840	Loop 7 Address 239 Address 240	Loop 7 address 240								Loop 7 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1841	Loop 8 Address 1 Address 2	Loop 8 address 2								Loop 8 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1960	Loop 8 Address 239 Address 240	Loop 8 address 240								Loop 8 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1961	Loop 9 Address 1 Address 2	Loop 9 address 2								Loop 9 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2080	Loop 9 Address 239 Address 240	Loop 9 address 240								Loop 9 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2081	Loop 10 Address 1 Address 2	Loop 10 address 2								Loop 10 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2200	Loop 10 Address 239 Address 240	Loop 10 address 240								Loop 10 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2201	Loop 11 Address 1 Address 2	Loop 11 address 2								Loop 11 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																

Registers for Previdia Max control panels (use Modbus 0x03 command to read)

Address	Name	High byte								Low byte							
		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
2320	Loop 11 Address 239 Address 240	Loop 11 address 240								Loop 11 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2321	Loop 12 Address 1 Address 2	Loop 12 address 2								Loop 12 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2440	Loop 12 Address 239 Address 240	Loop 12 address 240								Loop 12 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2441	Loop 13 Address 1 Address 2	Loop 13 address 2								Loop 13 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2560	Loop 13 Address 239 Address 240	Loop 13 address 240								Loop 13 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2561	Loop 14 Address 1 Address 2	Loop 14 address 2								Loop 14 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2680	Loop 14 Address 239 Address 240	Loop 14 address 240								Loop 14 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2681	Loop 15 Address 1 Address 2	Loop 15 address 2								Loop 15 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2800	Loop 15 Address 239 Address 240	Loop 15 address 240								Loop 15 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
2801	Loop 16 Address 1 Address 2	Loop 16 address 2								Loop 16 address 1							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
2920	Loop 16 Address 239 Address 240	Loop 16 address 240								Loop 16 address 239							
		Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm

Registers for Previdia Compact control panels (use Modbus 0x03 command to read)

Address	Name	High byte								Low byte							
		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Control panel details Status 1						Investigate	Mute	Night mode				Disabled	Fault	Early warning	Pre-alarm	Alarm
1	Control panel details Status 2													RT network	Fault fault	Low battery	Fault fault
2	Fault on boards 1	Fault board PREVIDIA-C-DIAL															Fault board I/O
6	Fault on boards 2								Module fault power supply module								Module fault LED
8	Active Timers 1	Timer 16	Timer 15	Timer 14	Timer 13	Timer 12	Timer 11	Timer 10	Timer 9	Timer 8	Timer 7	Timer 6	Timer 5	Timer 4	Timer 3	Timer 2	Timer 1
9	Active Timers 2	Timer 32	Timer 31	Timer 30	Timer 29	Timer 28	Timer 27	Timer 26	Timer 25	Timer 24	Timer 23	Timer 22	Timer 21	Timer 20	Timer 19	Timer 18	Timer 17
10	Disabled Timers 1	Timer 16	Timer 15	Timer 14	Timer 13	Timer 12	Timer 11	Timer 10	Timer 9	Timer 8	Timer 7	Timer 6	Timer 5	Timer 4	Timer 3	Timer 2	Timer 1
11	Disabled Timers 2	Timer 32	Timer 31	Timer 30	Timer 29	Timer 28	Timer 27	Timer 26	Timer 25	Timer 24	Timer 23	Timer 22	Timer 21	Timer 20	Timer 19	Timer 18	Timer 17
12	Loop fault															Fault loop 2	Fault loop 1
13	Loop disabled															Loop 2 disabled	Loop 1 disabled
20	Status of telephone communicator 1	Supervision failed	Call queue full	SMS fault	SMS OK	Fault call failed	Fault call OK	Alarm call failed	Alarm call OK	Fault call ongoing	Alarm call ongoing				GPRS Fault	PSTN Fault	GSM Fault
21	Status of telephone communicator 2														Info call disabled	Fault call disabled	Alarm call disabled
25	Fire extinguishment module									Fault	Automatic stop	Manual stop	Pre-extinguishment	Extinguishment	Manual disabled	Automatic disabled	Disabled
49	Faults on electrovalve terminal (I/O 4)															Short circuit	Open

Registers for Previdia Compact control panels (use Modbus 0x03 command to read)

Address	Name	High byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Low byte Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
100	Zone 1 Zone 2	*Zone 2* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Zone 1* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
599	Zone 999 Zone 1000	*Zone 1000* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Zone 999* Do not use	Test	Do not use	Disabled	Fault	Early warning	Pre-alarm	Alarm
600	Group 1 Group 2	*Group 2* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*Group 1* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm
...	...																
719	Group 239 Group 240	*Group 240* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm	*Group 239* Do not use	Do not use	Do not use	Disabled	Do not use	Early warning	Pre-alarm	Alarm
900	Channels I/O 1, I/O 2	*Channel I/O 2* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Channel I/O 1* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
901	Channels I/O 3, I/O 4	*Channel I/O 4* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Channel I/O 3* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
932	Relay output									*Relay output* Do not use	Do not use	Output status	Disabled	Do not use	Do not use	Do not use	Do not use
1001	Loop 1 Address 1 Address 2	*Loop1 address 2* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Loop1 address 1* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1120	Loop 1 Address 239 Address 240	*Loop1 address 240* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Loop1 address 239* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
1121	Loop 2 Address 1 Address 2	*Loop 2 address 2* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Loop 2 address 1* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm
...	...																
1240	Loop 2 Address 239 Address 240	*Loop 2 address 240* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm	*Loop 2 address 239* Do not use	Do not use	Output status	Disabled	Fault	Early warning	Pre-alarm	Alarm

3.1.2 COIL Mapping

The "SET COIL" allows you to carry out operations on the addressed control panel. To activate a COIL command relative to the implementation of an operation it is necessary to set it to "ON".

Following is the map of COIL registers:

COIL (use the Modbus 0x05 command)			
Address	Name for Previdia Max	Address	Name for Previdia Max
0	Activate "Action 1"	1400	Activate/Deactivate loop1 address 1 device's output
...	...	...	...
99	Activate "Action 100"	5239	Activate/Deactivate loop16 address 240 device's output
100	Enable/Disable Zone 1	5400	Enable/Disable I/O 1 of IFM4IIO 1 module
...	...	...	...
1099	Enable/Disable Zone 1000	5463	Enable/Disable I/O 4 of IFM4IO 16 module
1100	Activate/Deactivate I/O 1 of IFM4IO 1 module	5500	Enable/Disable relay 1 of the IFM4R 1 module
...	...	...	...
1163	Activate/Deactivate I/O 4 of IFM4IO 16 module	5563	Enable/Disable relay 4 of the IFM4R 16 module
1200	Activate/Deactivate relay 1 of the IFM4R 1 module	5600	Enable/Disable output 1 of the IFM24160 1 module
...	...	...	...
1263	Activate/Deactivate relay 4 of the IFM4R 16 module	5611	Enable/Disable output 3 of the IFM24160 4 module
1300	Activate/Deactivate output 1 of the IFM24160 1 module	5700	Enable/Disable address 1 of loop 1
...	...	...	...
1311	Enable/Disable* output 3 of the IFM24160 4 module	9540	Enable/Disable address 240 of loop 16

COIL (use the Modbus 0x05 command)			
Address	Name for Previdia Compact	Address	Name for Previdia Compact
0	Activate "Action 1"	1400	Activate/Deactivate loop1 address 1 device's output
...	...	...	...
99	Activate "Action 100"	1879	Activate/Deactivate loop 2 address 240 device's output
100	Enable/Disable Zone 1	5400	Enable/Disable I/O 1
...	...	...	...
1099	Enable/Disable Zone 1000	5404	Enable/Disable I/O 4
1100	Activate/Deactivate I/O 1	5500	Enable/Disable relay
...	...	5700	Enable/Disable address 1 of loop 1
1104	Activate/Deactivate I/O 4	...	...
1200	Activate/Deactivate relay	6179	Enable/Disable address 240 of loop 2

3.2 BACnet

BACnet is a building-automation-network communication protocol developed by ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers). BACnet, as a result of its versatility and flexibility, is now extensively used as a standard communication protocol between devices and building-automation systems made by various manufacturers.

The BACnet protocol used for Previdia Max, with the IFMLAN module, is subject to licencing regulations.

3.2.1 BACnet licence

The licences for use of the BACnet protocol on Previdia Max control panels must be purchased from Inim Electronics.

The order codes are as follows:

- **INFLINI0PRALICBAC500**, BACnet protocol licence Previdia 500 points, Italian
- **INFLINE0PRALICBAC500**, BACnet protocol licence Previdia 500 points, English

Each licence allows the management of 500 points. For the management of a greater number of points it is necessary to purchase more than one licence. Inim Electronics supplies a single licence containing the sum of the licences purchased as per the format indicated here.

3.2.2 Licence activation procedure

1. In order to activate the licence you must communicate the following data to Inim:

- the licence number shown in the letter *[A]*
- the serial number of the IFMLAN *[B]*
  (not to be confused with that of the FPMCPU). This data can be found in the software solution of the Previdia being configured, by going to the programming section of the IFMLAN module in the control panel.
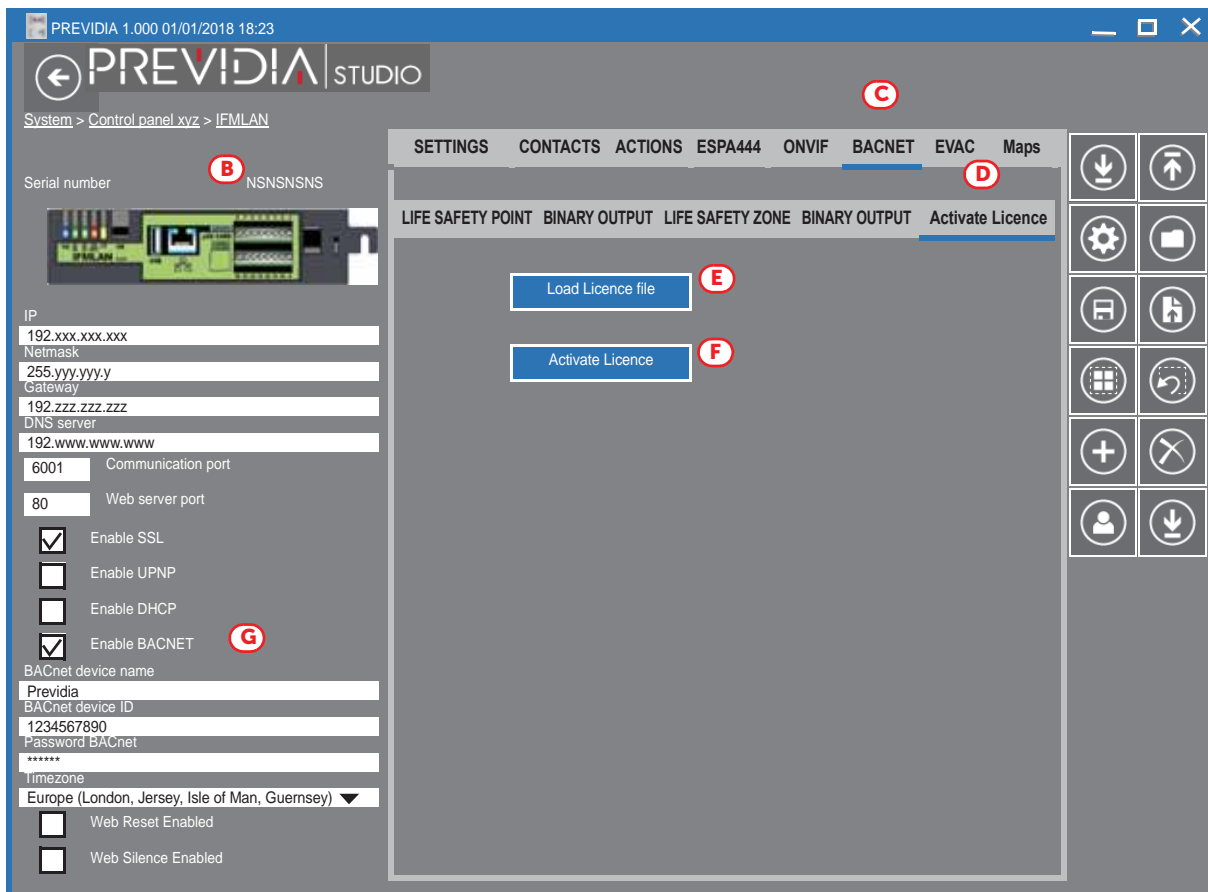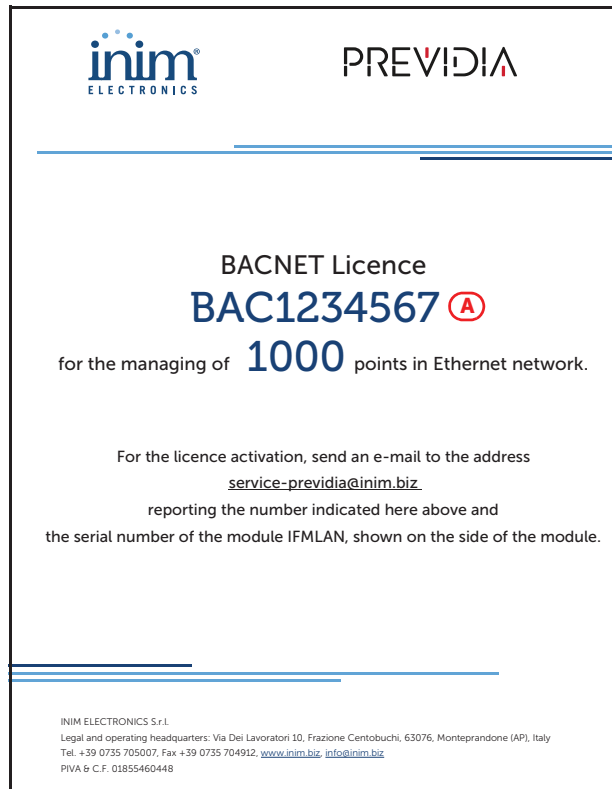
2. The activation of the licence can be carried via e-mail or web.browser.

Via e-mail: send an e-mail to **service-previdia@inim.biz** containing the numbers previously indicated. You will receive an e-mail containing a file block which corresponds to the actual licence, required to block BACnet functionality.

Via web: by connecting to the <u>service-previdia.inimcloud.com</u> website it is possible to request the activation of a BACnet licence. After providing the previously mentioned data, the website will send you a file which corresponds to the actual licence.

3. After receiving the block file you must go back to the software solution associated with the control panel you are configuring. You must then go to programming section of the IFMLAN module and access the "BACnet - Activate licence" *[C-D]*.

4. This section provides the **Load licence file** button*[E]* which allows you to inform the software of the location of the received file inside the computer.

5. Click on the **Activate licence** button *[F]* to send the licence to the IFMLAN module.

After the licence activation you can integrate the Previdia system using the BACnet protocol by means of the "Enable BACnet" option *[G]* and setting the parameters for the provider connection:

- BACnet device name
- BACnet device ID
- Password BACnet

3.2.3 BACnet objects

Following are the BACnet objects made available by Previdia and their essential features. For licencing purposes, each of the objects belonging to the typology listed below constitutes a "point".

- Life Safety Point
- Binary Input
- Binary Output
- Life Safety Zone

Life Safety Point

The "life safety point" comprises objects that represent the status of a specific point included in the following:

-   Loop point
-   IFM4IO module channel
-   IFM16IO module channel
-   IFMEXT module (one point only per module)

The status of each point is characterized by a defined list of values (stand-by, alarm, fault, etc.).

It is not possible to interact with a life safety point, change its status or bypass it.

Life Safety Zone

The "life safety zone" comprises objects that indicate the status of a zone. Therefore, they can be associated with the zones of the control panel that are linked to points.

It is not possible to interact with a life safety zone change its status or bypass it.

Binary Output

This object represents the status of any of the control panel outputs.

It is possible to change the status through the BACnet protocol. The "Binary output" objects of the Previdia control panel are the:

-   Loop point
-   IFM4IO module channel
-   IFM4R module channel
-   IFM16IO module channel
-   IFM24160 module channel
-   Actions on control panel

The actions on the control panel allow you to interact with the system. These are actions such as "silence sounders", "rearm control panel" or "investigate".
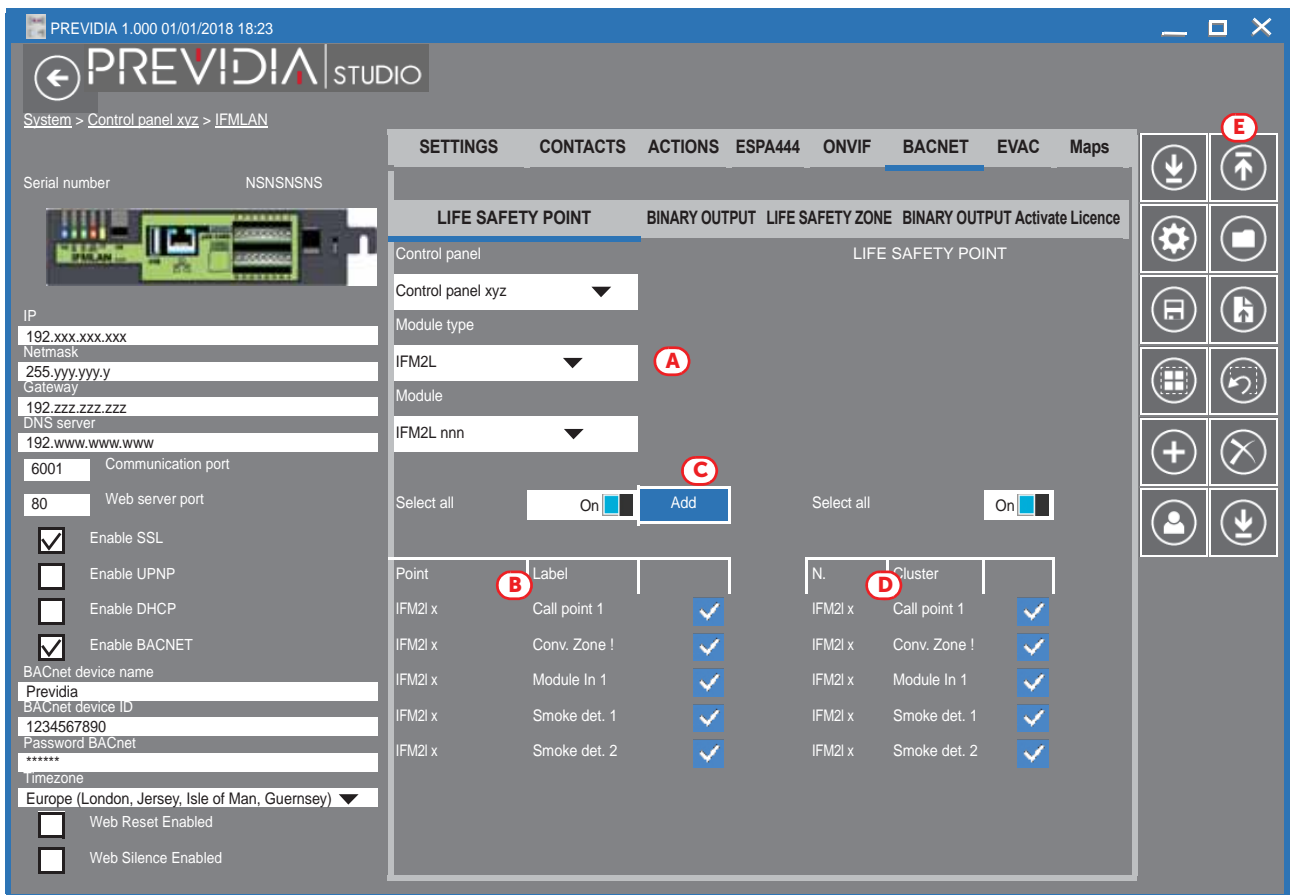
Binary Input

These objects represent the status of any of the control panel inputs, therefore, not is possible to view the status but not set it. On the Previdia control panel they are used for the viewing of some control panel conditions.

- Alarm
- Pre-alarm
- Fault
- Disable
- Night mode
- Sounder silenced
- Investigate

3.2.4 Creation of BACnet points via software

In order to create BACnet points you must first open the software, load the software solution of the relevant control panel/Hornet+ network, access the page relative to the IFMLAN then access the "BACnet" section.

This section provides the tools for the creation of life safety points. The other three sections ("Life safety zone", "Binary input" and "Binary output") function in the same way.

1. Select the control-panel point typology by means of the appropriate check boxes with dropdown menus *[A]*. In the section below *[B]* a list of points that correspond to the selection made will appear.

2. From the list select or deselect the BACnet points you wish to create.

3. Click on **Add** *[C]*. From this moment on the selected points will be shown in the "Life safety point" list *[D]*. The points in this section can be removed from the list by simply unticking the corresponding boxes.

4. Click on the **Write** button *[E]* to forward the programming to the control panel.

This procedure is valid for all BACnet point typologies.

3.3   SmartLook Software

The Previdia control panels can be supervised through the SmartLook software program created by Inim Electronics.

The SmartLook program is capable of enrolling the elements installed on the system either by reading the control panel directly or through the importation of data from the configuration software. At this point all that is necessary is to provide the graphic maps with image files and drag the icons of the objects installed on the system onto them.

SmartLook uses Modbus over TCP/IP to communicate with the control panel (refer to *paragraph 3.1 Modbus RTU and Modbus over TCP/IP*). During the configuration phase, SmartLook asks for the addresses of Previdia control panels on the Modbus and Hornet+ networks.

Note: *The address of a control panel in Modbus must coincide with that in Hornet+.*

For further information refer to the SmartLook software manual.

Chapter 4

Pager systems

ESPA 4.4.4 is a standard protocol for the interconnection of paging systems, PABXs and automatic fire-detection systems. This protocol allows the exchange/sending of text messages between mobile devices such as pagers, cordless telephones, etc.

ESPA444 protocol is implemented for Previdia Max control panels within the IFMLAN module, through the RS232 communication port *[A]*.

Serial	Terminal	
RS232	**1**	Programmable ancillary power output
	2	RS232 TX
	3	RS232 RX
	4	RS232 RTS
	5	RS232 CTS
	6	Negative (GND, ⏚)
	7, 8	Earth
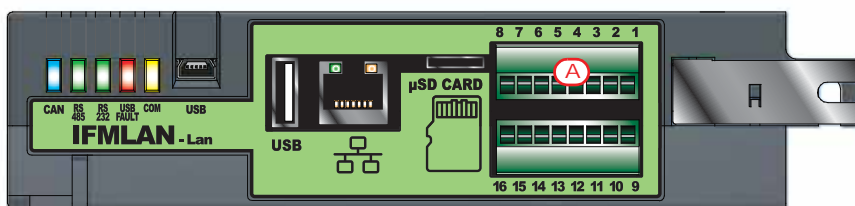
The protocol communication parameters can be configured through the Previdia control-panel configuration software. Access the page relative to the programming of the IFMLAN module, then access the "ESPA444" sub-section.

Refer to the user manual regarding the Previdia Max software configuration for further details.

Chapter 5

Video verification

Control panels from the Previdia series are capable of capturing images from IP cameras equipped with ONVIF. These images can be displayed on screens or forwarded from a remote location via e-mail to provide the end-user with a clear understanding of what is happening in the ambient signalling the alarm.

The video verification function is implemented within the IFMLAN module. By means of the configuration software you can define the list of IP cameras (up to 200) that are intended to interact with the Previdia system.

Previdia Compact control panels can use the video verification function by means of a IFMLAN module of a Previdia Max control panel.

Access the page relative to the programming of the IFMLAN module, then access the "Onvif" sub-section. Each camera will acquire the various "preset" parameters:

To add the cameras to the configuration simply click-on the **Add** button *[A]*. The "Onvif cameras" section *[B]* provides a list of all the IP cameras in the configuration, whilst the "Camera" section on the right *[C]* provides the parameters of the selected camera.

Once the IP camera list has been defined, the configuration software will allow you to establish a series of presettings that permit the identification of the specific IP camera and the correct preset in accordance with each event.

To program the presettings go to the programming section of the graphic maps. To reach the IP Camera section you must first access the programming section of the FPMCPU frontplate module, click-on the "**Graphic maps**" button then access the "**Cameras**" sub-section.
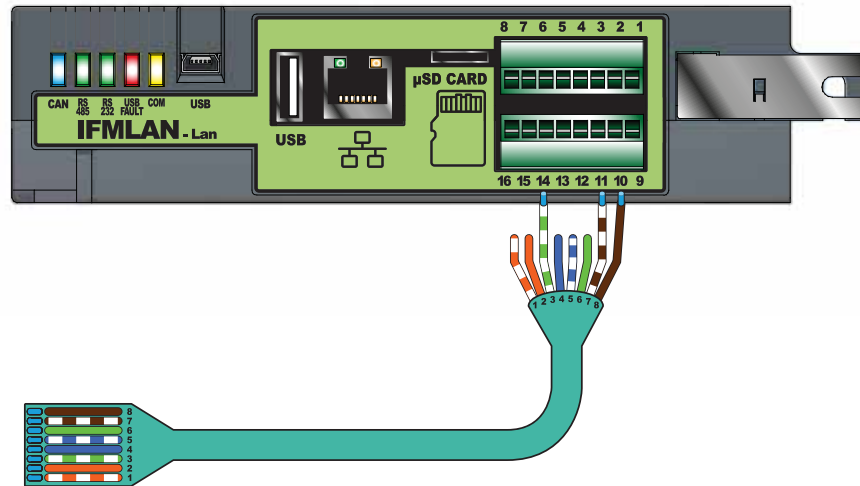

Refer to the user manual regarding the Previdia Max software configuration for further details.

Chapter 6

Voice Evac-systems

Previdia Max series control panels can be interconnected with the following voice evacuation systems.

- **Paso**

The voice evacuation systems made by Paso can be connected to the IFMLAN module through the RS485 port.

- **Tutondo**

The voice evacuation systems made by Tutondo can be connected to the IFMLAN module housed inside the Previdia Max control panel by means of TCP/IP connection..

6.1 Voice Evac configuration

Once the control panel has been connected to the voice evacuation system, the configuration software will allow you to configure each speaker line (evacuation zone) as an output capable of activating warning and evacuation messages.

Access the page relative to the programming of the IFMLAN module, then access the "Evac" sub-section.

1. Select the typology of voice-evacuation system *[A]*.

2. Indicate the address of the Previdia Max control panel on the selected evacuation system *[B]:*

- for "Paso" it is necessary to indicate the address on the RS485 connection BUS
- for "Tutondo" it is necessary to indicate the IP address and the port

3. Indicate the number of evacuation zones (speaker lines) in the "Number of zones" box *[C]*.

An icon will be added to the list at the bottom of the section for each added zone. In the case of "Tutondo", the "End of evacuation" zone is added automatically to all zones, this is an evacuation ended message that is common to all the evacuation zones.

4. Select each individual evacuation zone from the list *[D]* and program its parameters on the right *[E]*.

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