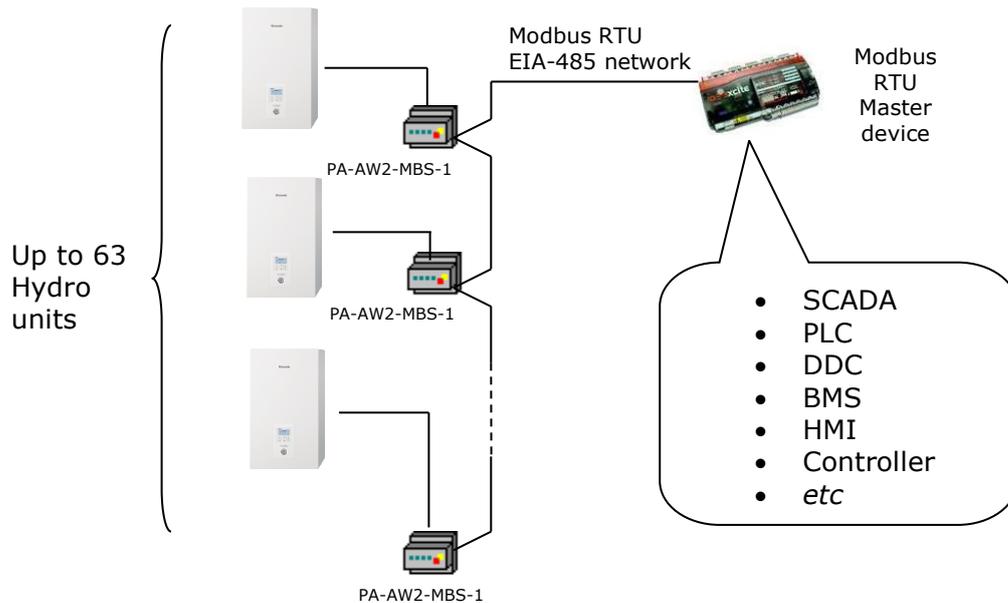# IntesisBox®

PA-AW2-MBS-1

Modbus Interface for PANASONIC Air-to-Water Systems
Aquarea H Generation

The PA-AW2-MBS-1 interface allows a complete and natural integration of **Panasonic Air-to-Water Systems** into Modbus RTU (EIA-485) networks. Compatible with Aquarea H Generation models from Panasonic.

- Reduced dimensions. 93 x 53 x 58 mm. / 3.7" x 2.1" x 2.3"

- Quick and easy installation. *Mountable on DIN rail, wall, or even inside the Hydro Unit.*

- External power not required.

- Direct connection to Modbus RTU (EIA-485) networks. Up to 63 PA-AW2-MBS-1 devices can be connected in the same network. PA-AW2-MBS-1 is a Modbus Slave device.

- Direct connection to the Hydro unit. Up to 1 Hydro unit can be connected to PA-AW2-MBS-1. *The cable for this connection is also supplied.*

- Configuration from both on-board DIP-switches and Modbus RTU.

- Total Control and Supervision.

- Real states of the Hydro unit's internal variables.

- Allows using simultaneously use of remote controls of the Hydro Unit and Modbus RTU.

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URL	http://www.intesisbox.com
Email	info@intesisbox.com
Phone	+34 938047134

1.   Modbus Interface

1.1   Modbus Functions

PA-AW2-MBS-1 implements the following standard Modbus functions:

- *3: Read Holding Registers*

- *4: Read Input Registers*

- *6: Write Single Register*

- *16: Write Multiple Registers* (Despite this function is allowed, the interface does not allow write operations on more than 1 register with the same request, this means that *length* field should always be 1 when this function is being used to write).

1.2   Modbus Communication parameters

PA-AW2-MBS-1 implements a Modbus RTU (Slave) interface, to be connected to an EIA-485 line. The communication parameters are:

8N2 communication (8 data bits, no parity and 2 stop bit). It also supports 8N1 communication (1 stop bit). No need to change settings of DIP-switches.

Configurable baud rates:

- 2400 bps

- 4800 bps

- 9600 bps (Default value)

- 19200 bps

- 38400 bps

- 57600 bps

- 76800 bps

- 115200 bps

2.   List of compatible Panasonic Hydro indoor units.

A list of Panasonic indoor unit model references compatible with PA-AW2-MBS-1 and their available features can be found at:

https://www.intesisbox.com/intesis/support/compatibilities/IntesisBox_PA-AW2-xxx-1_Compatibility.pdf

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3.   *Electrical and Mechanical features*

Enclosure	Plastic, type PC (UL 94 V-0) Net dimensions (dxwxh): 93 x 53 x 58 mm / 3.7" x 2.1" x 2.3" Color: Light Grey. RAL 7035	Operation Temperature	0ºC to +60ºC
Weight	85 g.	Stock Temperature	-20ºC to +85ºC
Mounting	Wall DIN rail EN60715 TH35.	Operational Humidity	<95% RH, non-condensing
Terminal Wiring (for low-voltage signals)	For 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	Stock Humidity	<95% RH, non-condensing
Modbus RTU port	1 x Serial EIA485 Plug-in screw terminal block (2 poles): A, B Compatible with Modbus RTU EIA-485 networks	Isolation voltage	1500 VDC
Hydro unit port	1 x Specific connector Specific cable included	Isolation resistance	1000 MΩ
Switch 1 (SW1)	1 x DIP-Switch for Hydro Unit features	Protection	IP20 (IEC60529)
Switch 3 (SW3)	1 x DIP-Switch for Modbus RTU settings	LED indicators	2 x Onboard LED - Operational status
Switch 4 (SW4)	1 x DIP-Switch for extra functions		

4.   *Connections*

PA-AW2-MBS-1 connects directly to the Hydro unit. Use the *EIA485* connector in the PA-AW2-MBS-1 to connect to the Modbus network.