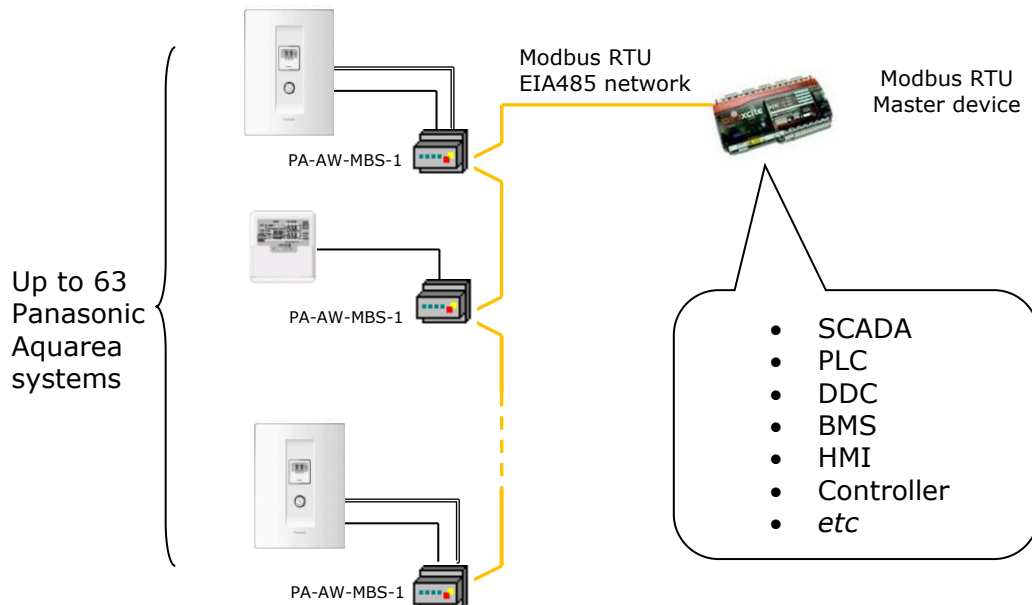




# IntesisBox®

## PA-AW-MBS-1

### Modbus Interface for Panasonic Aquarea series



The PA-AW-MBS-1 interface allows a complete and natural integration of **Panasonic Aquarea Air-to-Water systems** into Modbus RTU (EIA485) networks.

- Reduced dimensions. 93 x 53 x 58 mm.
- Quick and easy installation. *Mountable on DIN rail or wall.*
- External power not required.
- Direct connection to Modbus RTU (EIA485) networks. Up to 63 PA-AW-MBS-1 devices can be connected in the same network. PA-AW-MBS-1 is a Modbus slave device.
- Direct connection to the AW system.
- Configuration from both on-board DIP-switches and Modbus RTU.
- Total Control and Supervision. Real states of the AW system's internal variables<sup>1</sup>.
- Allows using simultaneously the IR and wired remote controls and Modbus RTU.

<sup>1</sup> Values shown in the PA-AW-MBS-1 and the Control Panel may differ due to the non-synchronous behavior of the Panasonic Aquarea system.

## 1. Modbus Interface

### 1.1 Modbus Functions

PA-AW-MBS-1 implements the following standard MODBUS functions:

- 3: Read Holding Registers
- 4: Read Input Registers
- 6: Write Single Register
- 16: Write Multiple Registers (Although 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 using this function for writes).

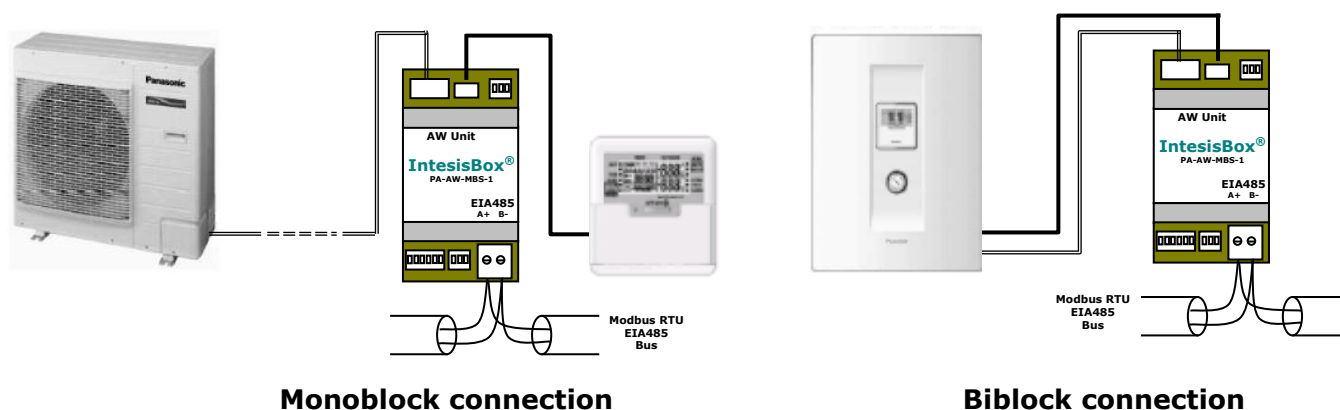
### 1.2 Modbus Communication parameters

PA-AW-MBS-1 implements a MODBUS RTU (slave) interface, to be connected to an EIA485 line. The communication parameters are:

- 8N1/8N2 communication (8 data bits, no parity and 1 or 2 stop bit)
- Configurable baud rates
  - 2400 bps
  - 4800 bps
  - 9600 bps (default)
  - 19200 bps

## 2. Connections

PA-AW-MBS-1 connects directly to the indoor unit (Panasonic Aquarea Biblock models) or to the Control Panel (Panasonic Aquarea Monoblock models). Use the EIA485 connector in the PA-AW-MBS-1 to connect it to the Modbus network.



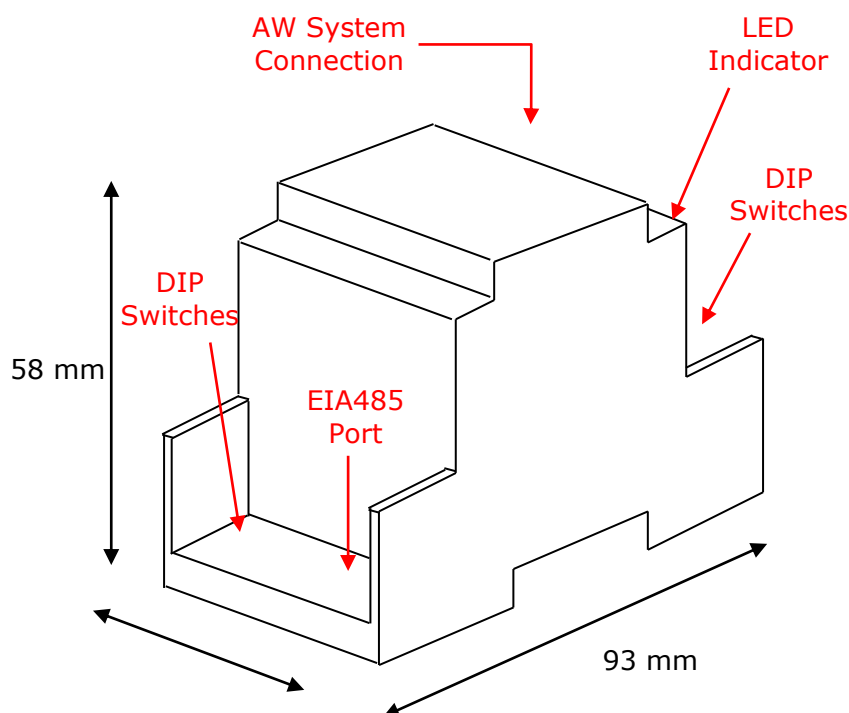
**Figure 2.1** PA-AW-MBS-1 connections into Aquarea Monoblock and Biblock systems

## 3. List of supported Panasonic Aquarea Unit Types

A list of Panasonic Aquarea units compatible with PA-AW-MBS-1 can be found in:

[http://www.intesis.com/pdf/IntesisBox\\_PA-AW-xxx-1\\_AW\\_Compatibility.pdf](http://www.intesis.com/pdf/IntesisBox_PA-AW-xxx-1_AW_Compatibility.pdf)

## 4. Technical Specifications



<b>Enclosure</b>	ABS (UL 94 HB). 2,5mm thickness. Dimensions: 93x53x58 mm Weight:85g
<b>Color</b>	Light Grey
<b>Power supply</b>	Supplied through Aquarea bus.
<b>LED indicators</b>	1 x Device status 1 x Error indicator
<b>Terminal wiring (for low-voltage signals)</b>	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.75 ... 1.25mm <sup>2</sup> 2 cores: 0.75 ... 1.25mm <sup>2</sup> 3 cores: not permitted
<b>AW system connection</b>	K1 (Aquarea unit) (4 x 0.22 - Shielded) K2 (Remote controller) (4 x 0.22 - Shielded)
<b>Modbus RTU port (EIA485 Port)</b>	1 x Serial EIA485 (Plug-in screw terminal block 2 poles). SELV
<b>Operating Temperature</b>	From 0°C to 40°C
<b>Operating Humidity</b>	<95% RH, non-condensing
<b>Isolation Voltage</b>	1000 VDC
<b>Isolation Resistance</b>	1000 MΩ
<b>RoHS conformity</b>	Compliant with RoHS directive (2002/95/CE).
<b>Certifications</b>	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; EN 50090-2-2;