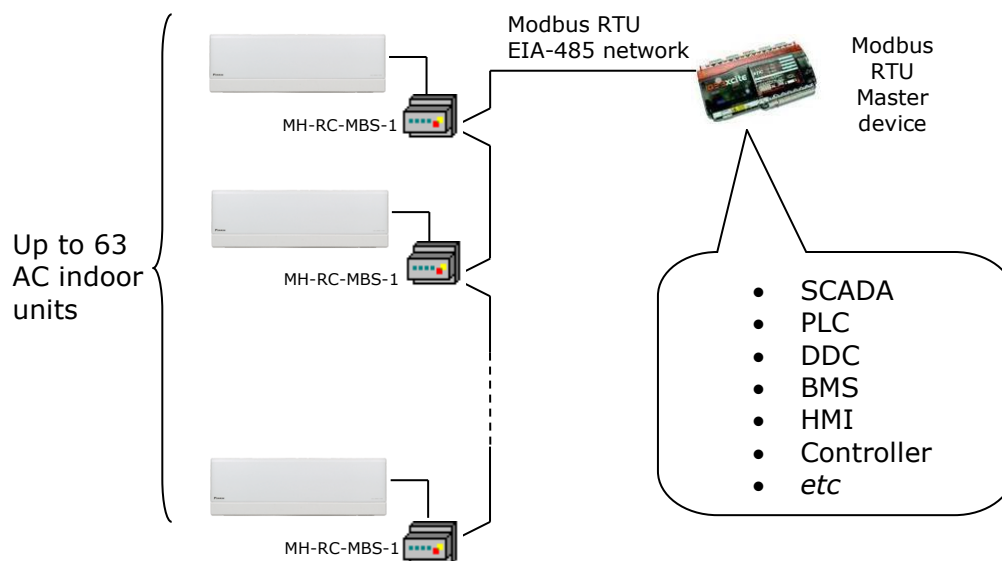




## IntesisBox<sup>®</sup> MH-RC-MBS-1

### Modbus Interface for MITSUBISHI HEAVY INDUSTRIES Air Conditioners



The MH-RC-MBS-1 interface allows a complete and natural integration of **Mitsubishi Heavy Industries** air conditioners into Modbus RTU (EIA-485) networks.

- 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 unit in some models of AC.*
- External power not required.
- Direct connection to Modbus RTU (EIA-485) networks. Up to 63 MH-RC-MBS-1 devices can be connected in the same network. MH-RC-MBS-1 is a Modbus Slave device.
- Direct connection to the AC indoor unit.
- Configuration from both on-board DIP-switches and Modbus RTU.
- Total Control and Supervision.
- Real states of the AC unit's internal variables.
- Allows using simultaneously remote controls and Modbus RTU.

## 1. Modbus Interface

### 1.1 Modbus Functions

MH-RC-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

MH-RC-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)
- 19200 bps
- 38400 bps
- 57600 bps
- 76800 bps
- 115200 bps

## 2. List of compatible Mitsubishi Heavy Industries AC indoor units.

A list of Mitsubishi Heavy Industries indoor unit model references compatible with MH-RC-MBS-1 and their available features can be found at:

[https://www.intesisbox.com/intesis/support/compatibilities/IntesisBox\\_MH-RC-xxx-1\\_AC\\_Compatibility.pdf](https://www.intesisbox.com/intesis/support/compatibilities/IntesisBox_MH-RC-xxx-1_AC_Compatibility.pdf)

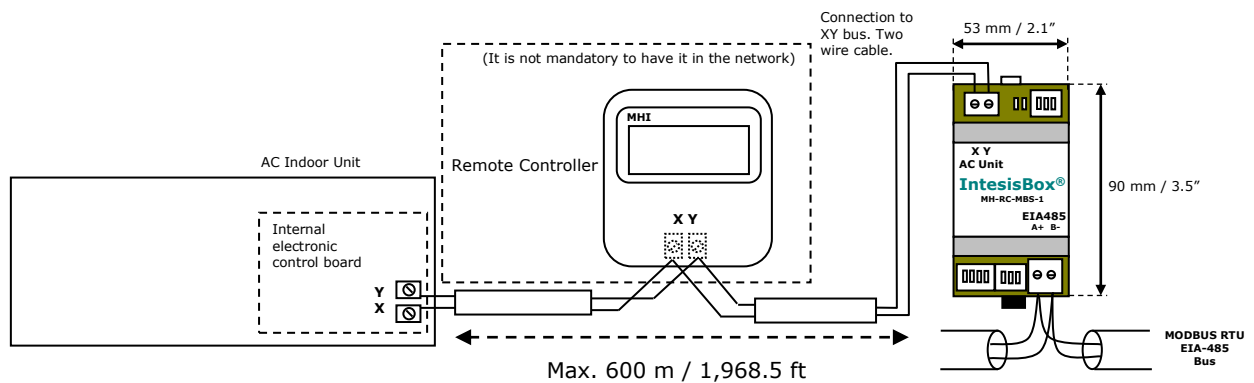
### 3. *Mechanical and electrical features*

Enclosure	Plastic, type PC (UL 94 V-0) Net dimensions (dxwxh): 93 x 53 x 58 mm Color: Light Grey. RAL 7035	Operation Temperature	0°C to +60°C
Weight	85 g.	Stock Temperature	-20°C to +85°C
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 <sup>2</sup> ... 2.5mm <sup>2</sup> 2 cores: 0.5mm <sup>2</sup> ... 1.5mm <sup>2</sup> 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
AC unit port	1 x bus XY Plug-in screw terminal block (2 poles): X, Y Compatible with Mitsubishi Heavy Industries networks	Isolation resistance	1000 MΩ
Switch 1 (SW1)	1 x DIP-Switch for AC features	Protection	IP20 (IEC60529)
Switch 3 (SW3)	1 x DIP-Switch for Modbus RTU settings	LED indicators	1 x Onboard LED - Operational status
Switch 4 (SW4)	1 x DIP-Switch for extra functions		

## 4. Connections

The MH-RC-MBS-1 can be used with a **Mitsubishi Heavy Industries** Remote Controllers or without them. Use the EIA485 connector in the MH-RC-MBS-1 to connect to the Modbus network.

- MH-RC-MBS-1 with Mitsubishi Heavy Industries Remote Controller



- MH-RC-MBS-1 without Mitsubishi Heavy Industries Remote Controller

