# ESD make MODBUS HOOTER MANUAL

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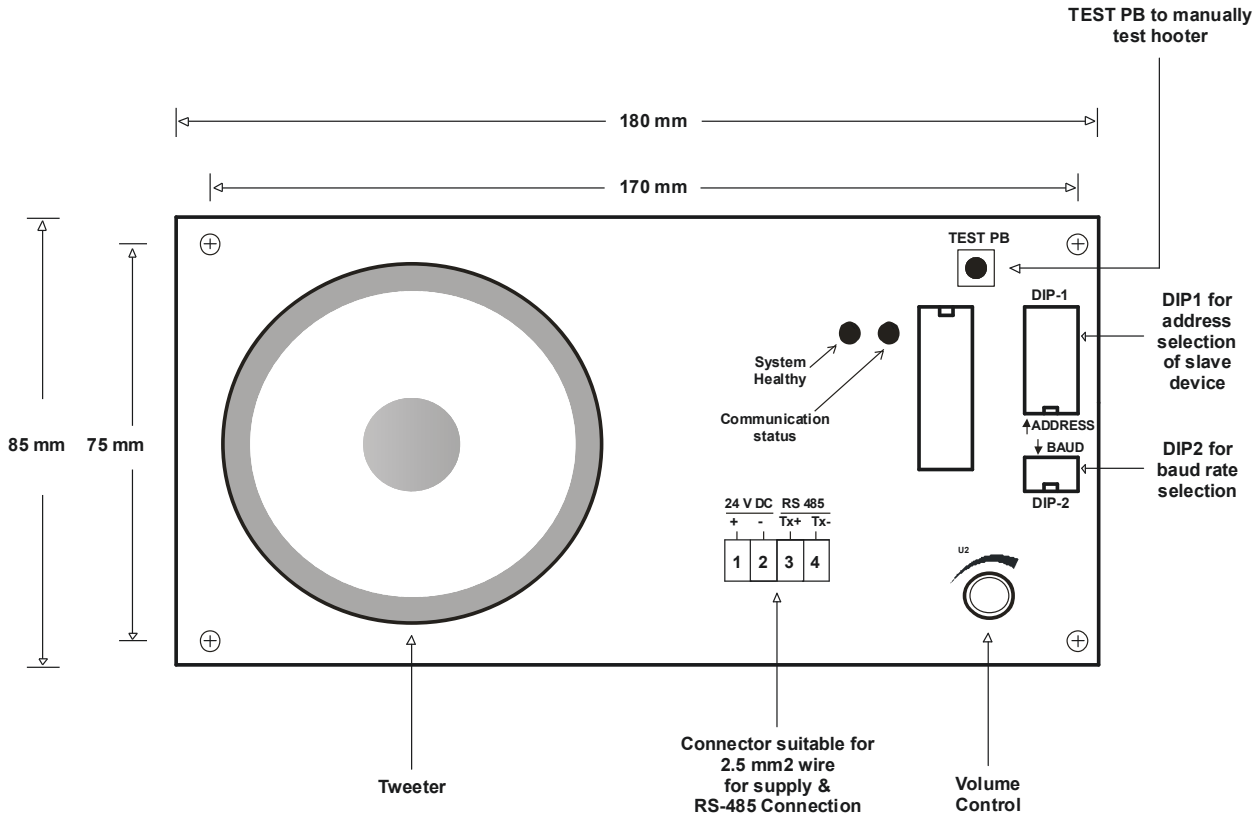
## 1.1 Product photo

## 1.2 Specifications

| | |
|---|---|
| Model | : Modbus Hooter |
| Audio Output | : 80 db |
| Volume control | : Using volume control potentiometer |
| Interface | : RS 485 (2 wire) |
| Protocol | : Modbus RTU |
| Parity | : None |
| Data byte | : 8 bit |
| Stop bit | : 1 |
| Function supported | : Write single coil (05) |
| Device address | : Selectable from 1 to 255 using 8 way DIP switch |
| Baud rate | : Selectable from 2400, 4800, 9600, 19200 using 2 way DIP switch |
| LED Indication | : 2 nos. of 3 mm RED LED (1 nos. flashing for system healthy and 1 nos. for communication status) |
| Test Push button | : Manual hooter ON command. |
| | |
| Relative Humidity | : Less than 90% non condensing |
| Ambient Temp. | : 5 to 55°C |
| Power supply | : 24 VDC, +/- 10 % |
| Current consumption | : Idle current 50 mA, full load 400 mA |
| Termination | : Pluggable screwed type suitable for 2.5 $mm^2$ wire |
| | |
| Dimensions | : 186 x 92 mm, 60 mm (D) |
| Mounting | : Wall |
| Weight | : 1 kg approx. |

**Note: Termination resistor of 120 ohms is provided separately with each unit.**

## 1.3 Illustrations



## 1.4 Communication protocol

| | |
|---|---|
| Communication | : RS-485 (2 wire) |
| Protocol | : MODBUS RTU |
| Baud Rate | : Selectable between 2400, 4800, 9600 & 19200 bps |
| Interface | : RS 485 (2 wire) |
| Parity | : None |
| Data byte | : 8 bit |
| Stop bit | : 1 |
| Device Address | : Programmable from 1 to 255 |
| Function supported | : Write single coil (05) |
| Write Coil Address | : Decimal: 35351, Hexadecimal: 0x8A17 |

Response Timeout (By master**):** 200 msec minimum

**FUNCTION: Message Formats**

**Message Format: (Request initiated by Master)**

| Slave Address | Function Code | Start Address (Hi) | Start Address (Lo) | Data High (Hi) byte | Data Low (Lo) byte | CRC Check (Lo) | CRC Check (Hi) |
|---|---|---|---|---|---|---|---|
| 01 | 05 | 8A | 17 | 00 | 00 | 57 | D6 |

**Message Formats: (Response by the slave for the request initiated by the master)**

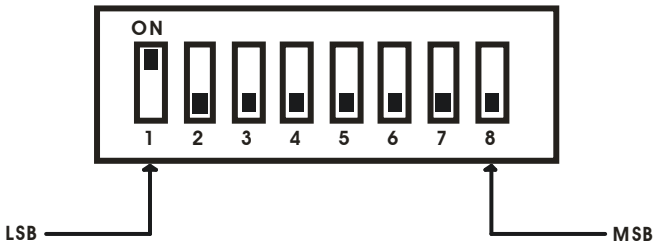
| Slave Address | Function Code | Byte Count(Hi) | Byte Count(Lo) | Data(Hi) | Data(Lo) | CRC Check (Lo) | CRC Check (Hi) |
|---|---|---|---|---|---|---|---|
| 01 | 05 | 8A | 17 | 00 | 00 | 57 | D6 |

## 1.5 Address selection procedure

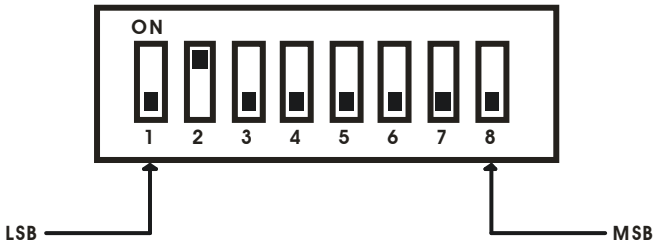
Modbus RTU is “Master/Slave” communication protocol. Usually, there is one master & multiple slave devices on one multi-drop RS-485 serial bus. Each slave is assigned a unique slave address. Here, the address is determined by the DIP switch setting. DIP switch (DIP-1) position 1 to 8 sets the slave address from 1 to 255. Whenever user changes the device address and baud rate settings, the unit needs to be restarted. If all the DIP positions in address DIP (DIP-1) are kept in OFF position, then it is treated as a default address 1.

ON - Shift DIP to ON side
OFF- Shift DIP to numerical side

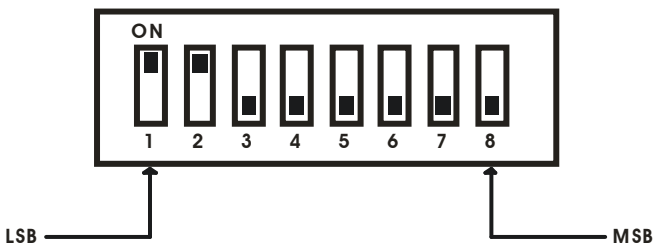
e.g 1) To set slave address 1, postion1 = ON & all other position are OFF



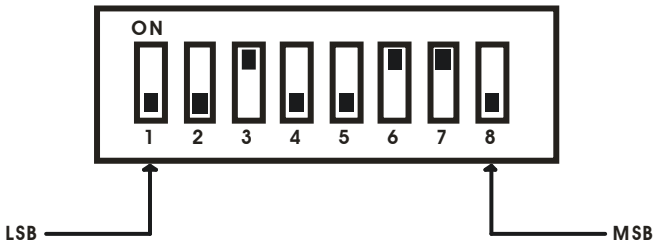

e.g 2) To set slave address 2, postion2 = ON & all other position are OFF



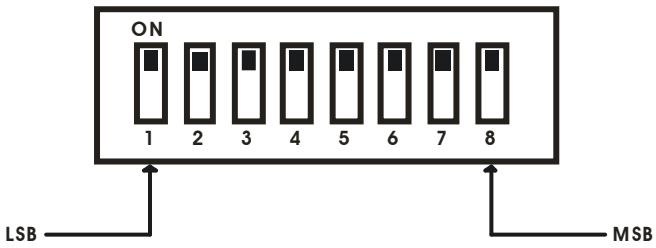

e.g 3) To set slave address 3, postion1,2 = ON & all other position are OFF



e.g 4) To set slave address 100, postion3,6,7 = ON & all other position are OFF

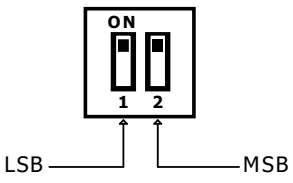



e.g 5) To set slave address 255, postion1, 2, 3, 4, 5, 6, 7, 8 = ON.




## 1.6 Baud rate selection procedure

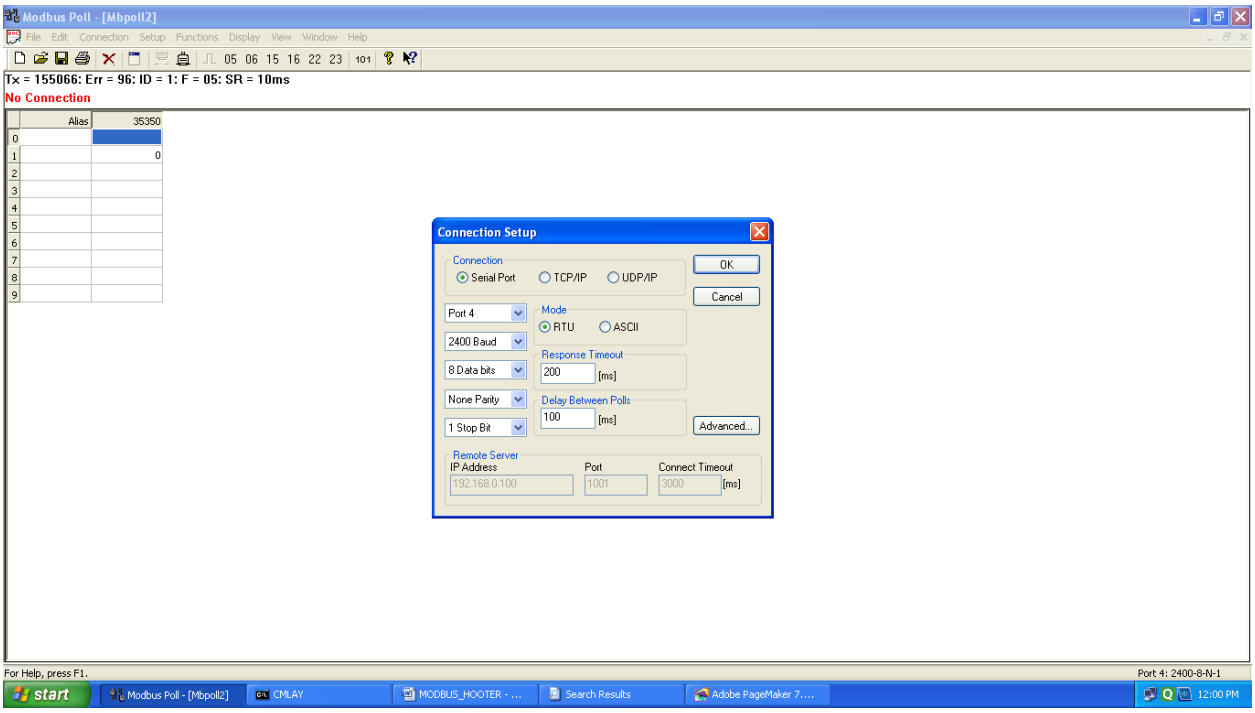
DIP switch (DIP-2) position 1 & 2 can be used to set the baud rate. Modbus hooter supports 4 different baud rates. i.e. 2400, 4800, 9600 and 19200 bps.



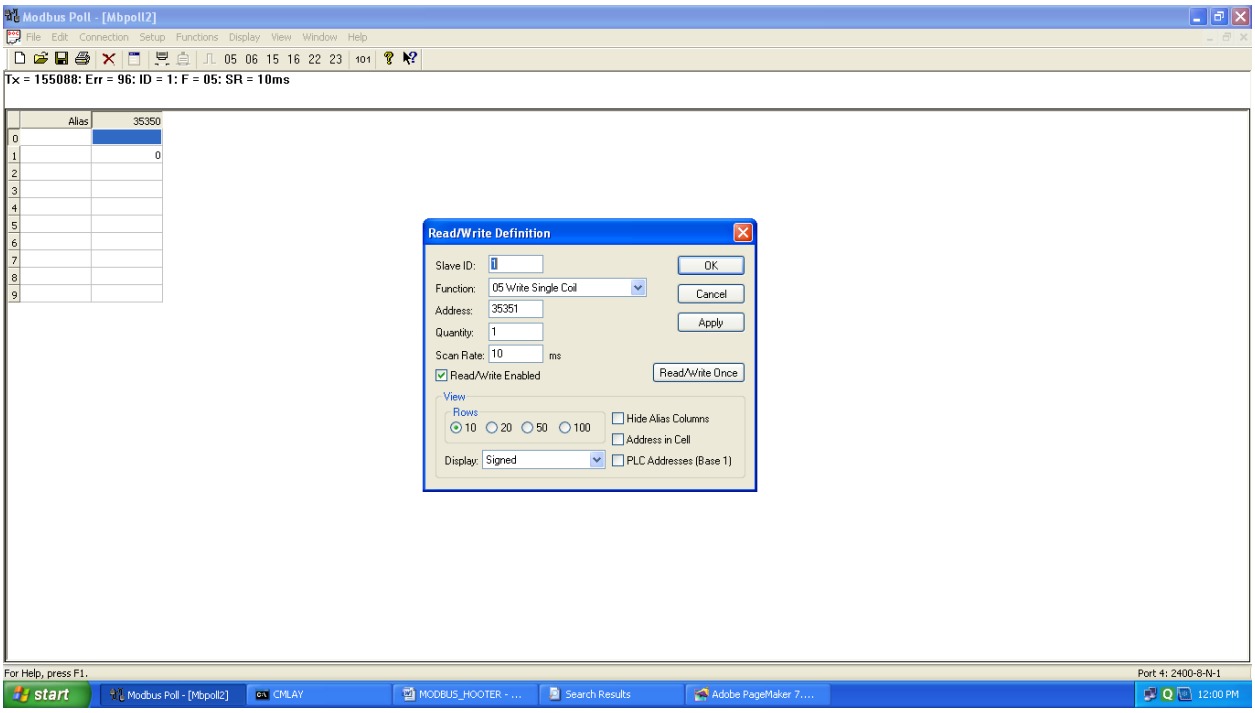

| SWITCH POSITION2 | SWITCH POSITION1 | BAUD RATE |
|---|---|---|
| OFF | OFF | 2400 |
| OFF | ON | 4800 |
| ON | OFF | 9600 |
| ON | ON | 19200 |

## 1.7 Modbus Poll tester communication screen shots

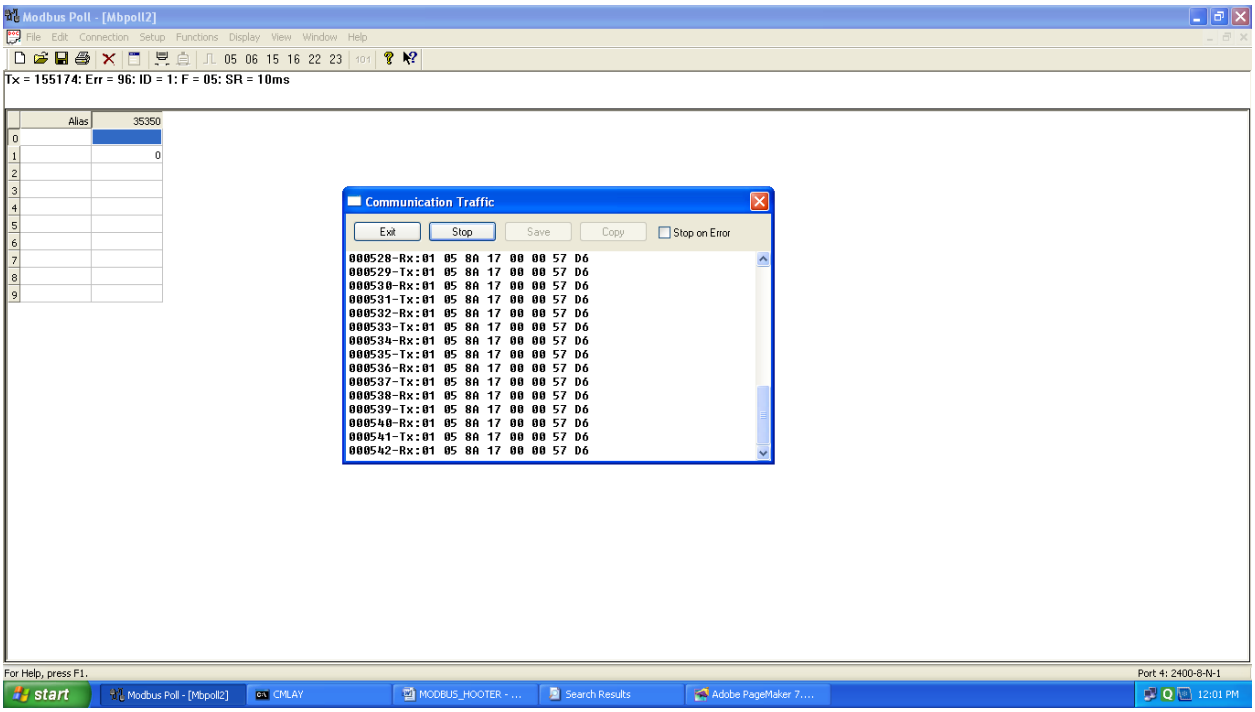
a) Screen showing serial port settings.




b) Screen showing device communication settings.



c) Screen showing data exchanged while communicating with PC.

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