

## Remote Modbus Display "RMD"

### Description

As an accessory to the FUSION or MIRADOR remote monitoring system, the **RMD** can be used to display statuses of critical infrastructures such as HVAC systems, AC Power gears and/or DC Power Systems. More specifically it can display the status of up to 4 I/O channels in real time at a strategic location for maintenance staff on duty. The **RMD** eliminates the need to use a computer connected to the FUSION or MIRADOR system to get the temperature, plant voltage and/or load current information.



### Operation

The **RMD** is a LCD display designed for panel mounting; it is powered by 48Vdc and communicates using Modbus RTU protocol. It can be installed as far as 600ft/180m away from the FUSION/MIRADOR. The **RMD** could also be used with any Modbus master devices. Communicate with Multitel staff to discuss the scope of your application.

*\* To view the screen, simply press and release the screen activation button on the front of the enclosure - the screen will automatically turn off after 15 minutes of activity*

The information displayed on the **RMD** is controlled and configured by the FUSION or MIRADOR unit where a special configuration module called "Remote Display" is provided to easily configure the device. Up to 4 I/O channels can be displayed at once, each line is 20 characters maximum therefore, each I/O channel name can be as long as 11 characters to leave room for the displayed value. If the value exceeds 10 characters, it will automatically be divided by 1000 and a small "k" for kilo will appear in front of the Unit associated to the I/O channel.

The Modbus communication cable has to be connected as described in the Installation & Configuration section (page 2). The **RMD** is designed to be installed on the wall or on a flat surface such as a blank panel. No mounting brackets are available to support a rack mounting option.

### Features

- Rugged UP-94V0 plastic enclosure, easily mounted on walls or on a blank panel (2U rack space minimum).
- Designed specifically for 48Vdc standby telecom applications, modular plugin screw type connectors.
- Displays a maximum of 4 I/O channel statuses (when operated with FUSION or MIRADOR).
- Easy to configure with the pre-formatted programming.
- Compatible with Modbus RTU protocol.
- 20x4 Characters MODBUS RTU Slave LCD Module.
- Display ASCII text and Integer Data from Modbus Master Device.
- 1 year limited warranty.

### Ordering Information

The ordering information is as follows:

| Part Number | Description                          |
|-------------|--------------------------------------|
| M-7048-VFD  | 20 X 4 Modbus VFD Display;48V;Modbus |

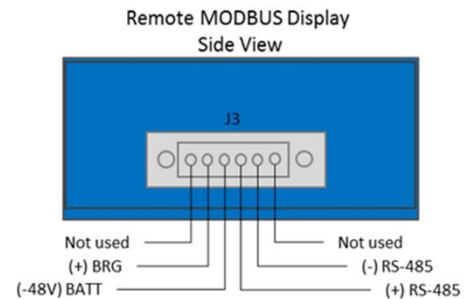
**Specifications**

| General Specifications                       |   |
|--|---|
| Operating Voltage Range                      | 36 to 75VDC<br>(Reverse polarity protected) |
| Typical Power Consumption                    | 0.5 Watt                                    |
| Environmental                                |   |
| Operating temperature range (SI)             | 0 °C to 50 °C                               |
| Operating temperature range (US)             | 32°F to 122 °F                              |
| Communications                               |   |
| Serial RS-485                                | 2-wire (8 Data Bits, No parity, 1 Stop bit) |
| Modbus RTU Protocol                          | Dedicated                                   |
| Device address                               | Factory set to 101                          |
| Communication Speed                          | Factory set to 9600 baud                    |
| Mechanical                                   |   |
| Dimension <b>Height x Depth x Width</b> (SI) | 44 mm x 84,6 mm x 136,4 mm                  |
| Dimension <b>Height x Depth x Width</b> (US) | 1.732 in x 3,32 in x 5.36 in                |
| Weight (SI)                                  | 0.25kg                                      |
| Weight (US)                                  | 0.55lb                                      |

**Installation & Configuration**

A step by step installation procedure is provided below. Fix the module at eye level for easy viewing. The communication wires should not exceed 600ft and follow RS-485 network cabling good practices. Basic tools are required to install the **RMD** such as: Small flat screwdriver, cutters, pliers, etc.. (Tools are not provided by Multitel). The RMD Modbus address is factory programmed to **101** and the baud rate is set at **9600**.

1. Unpack the **RMD** and make certain you have all the necessary materials before starting the installation.
2. Using the mounting screws, mount the **RMD** at the desired location, not exceeding 600ft from the FUSION or MIRADOR.
3. Wiring instructions: Do not make wiring connections while the **RMD** screw type connector is in place. For wiring details, refer to diagram.
4. Power connections:
  - a. Through a 1/2Amp fuse, connect the "BATT" pin to the -48Vdc side.
  - b. Connect the "BRG" pin to the "Battery Return Ground" side.
5. Serial ModBus Connections to RS-485 or MLINK connector at the back of the FUSION:
  - a. Connect (-) RS-485 pin to FUSION's RS-485/MLINK connector pin 5 (RJ-12).
  - b. Connect (+) RS-485" pin to FUSION's RS-485/MLINK connector pin 3 (RJ-12).
6. With fuse in place, now plug-in the screw type connector in place. The LCD panel will display the communication speed (9600) and Modbus device address (101) for 3 seconds at startup.
7. To configure the MODBUS display, connect with the FUSION and configure the following parameters accordingly: for more detailed information, please refer to FUSION user manual revision 4.7 or later or MIRADOR user manual revision 3.8 or later.



Enter module state (0:Disabled, 1:Enabled, 2:None) Choose #1 for Enabled.  
 Enter slave ID (1 - 255) Choose #101 as default or accordingly to your setup.  
 Enter port (1:RS485 Back Port, 2:MLINK Port) Default = Choose MLINK Port or accordingly to your setup.  
 Enter channel to display on line 1 – Enter the channel mnemonic of the value to be displayed on Line #1.  
 Enter text to display on line 1 - Enter the description of the displayed value, stay within 11 character maximum.  
 ...same procedure for line 2, 3 and 4.

You now have completed the installation of your **Remote Modbus Display** unit. If you have questions or need technical assistance on our products; please do not hesitate to contact us at Multitel.



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