SMARTBOB II INVENTORY MANAGEMENT SYSTEM

- Proven Technology
- Reliable & Repeatable measurements
- Not affected by changing material characteristics
- Unaffected by dust, temperature, dielectric constant, humidity or angle of repose
- Minimal contact with material
- No field calibration or adjustments required
- Affordable

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Taking Control...To A Higher Level

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MUCM

SmartBob II Momentum Universal Communication Module

Easy Serial Interface to PLC, HMI or DCS Systems

SmartBob II Momentum Universal Communication Module (MUCM) . The standard model allows Modbus serial masters to gather data from BinMaster SmartBob II remotes.

The SmartBob II Momentum Universal Communication Module (MUCM) allows a Modbus serial master to gather data from up to 32 BinMaster SmartBob II remotes. The data from each SmartBob II remote is presented as a Modbus Holding Register (4x). Each bob is assigned a unique Modbus slave address. A special Modbus slave address of 247 is provided to initiate a measurement and to give a summary of all the measurements from the SmartBob Remotes in the network. The MUCM may be configured as a Modbus RTU or a Modbus ASCII slave.

The system shown in figure 1.1 shows a Modbus Master (HMI,DCS,or PLC), a SmartBob II MUCM, and eight SmartBob II remotes located on vessels. The Modbus RTU master has an RS-232 port that connects to the MUCM. The SmartBob remotes are connected to the MUCM via a multi-drop RS-485 network, are set for slave addresses 1 through 8, and are mapped to Modbus slave addresses 1 through 8 respectively.

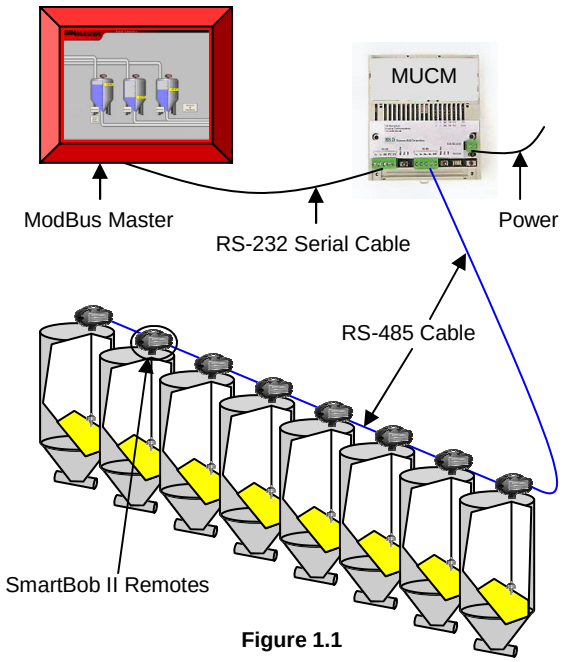

Figure 1.1

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BINMASTER MUCM

Simple MUCM Set-Up:

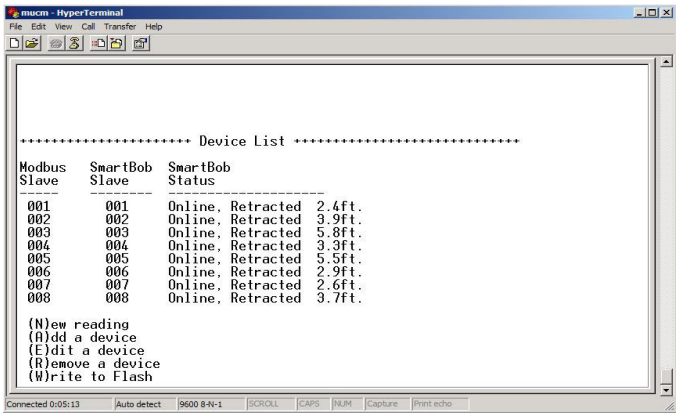


Figure 2.1 HyperTerminal Setup Device Screen

The set-up parameters may be reviewed and modified by connecting a terminal or emulator such as a HyperTerminal to MUCM port 1. The setup device screen will bring up prompts (figure 2.1) for the Modbus slave address and SmartBob Slave address. The MUCM will answer Modbus RTU requests on its RS-232 port that are directed to a Modbus slave address. The setup device screen allows you to add, edit, remove, and perform a test measurement on all the SmartBob II remotes in the system.

Modbus Settings:

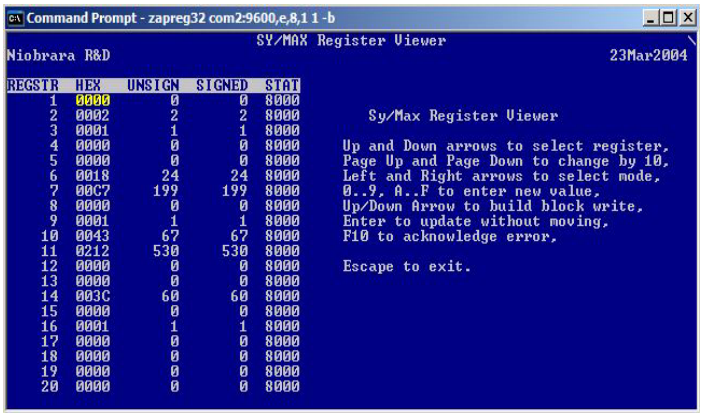
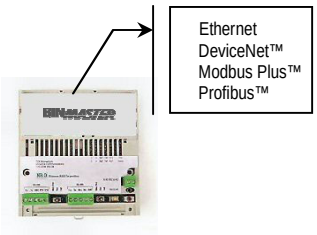


Figure 2.2 Zapreg32 of Slave 1 Screen

The program Zapreg32.exe (figure 2.2) may be used to quickly test the Modbus settings on the MUCM. The data from a given SmartBob is presented as holding registers (4x). Register 1 is a read/write and any value written to this register will cause the Smartbob II remotes to take a new reading. Registers 2 through 66 are read only 16-bit unsigned integers that provide data on the SmartBob. Several data points have an implied decimal place to give greater precision for the reading. For example, register 6 indicates depth to product in feet divided by 10. A value of 24 indicates 2.4 ft.

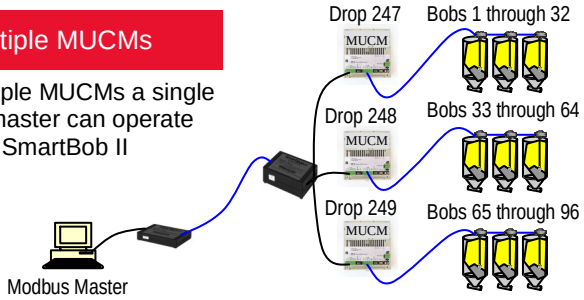
Communication Adapters

Optional communication adapter tophats are available in the following protocols. This flexibility allows the MUCM to be used in a variety of applications.



Multiple MUCMs

With multiple MUCMs a single Modbus master can operate up to 239 SmartBob II Remotes.



Specifications:

Dimensions:	Standard MUCM base module; 4.9” wide x 5.6” tall x 1.6” deep (124 x 142 x 41 mm)
Power Requirements:	9-30 VAC or VDC; 5 Watts max.
RS-232 Port:	Modbus RTU or Modbus ACCII Slave; 2400, 4800, 9600, or 19200 baud; EVEN or NONE parity; 7 or 8 data bits; 1 stop bit; Push-to-Talk RTS/CTS handshaking
RS-485 Port:	2 Wire RS-485 Multidrop; SmartBob II protocol.
Switches:	1 Memory Protect/Run/Halt for each port, run/load switch; recessed reset switch.
Indicators:	LED Rx and Tx for each serial port, LED run indicator for each program; LEDs for power and ready; Four LEDs under user program control.
Program Storage:	2 program storage areas; 128 Kbytes of flash memory each.
Real Time Clock:	Maintained by external power when present or by internal capacitor for up to one week when unpowered.
Operating Conditions:	25 to 120 degrees F operating temperature. Humidity up to 90% noncondensing.

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