



Allen-Bradley

White Paper

**MicroLogix™ 1200 and 1500
Utilizing GSM RTU's**



Bringing Together Leading Brands in Industrial Automation

MicroLogix 1200 and 1500 Utilizing GSM RTU's



Take Control with MicroLogix 1200

The MicroLogix 1200 controllers are truly micro in size. With a footprint as small as 3.52" X 4.33" (90mm X 110mm), they are ideal for control projects where panel space is a challenge. The MicroLogix 1200 makes use of discrete and analog expansion I/O modules (providing up to 88 points) for a lot of application flexibility. Removable I/O labels with a write-on area make for easy field device identification to reduce valuable troubleshooting and maintenance time. The finger-safe terminal blocks for safe operation meet global safety standards. The MicroLogix 1200 boasts a large 6K memory, with 4K words available for user programs and configurable 2K words for user data. This feature of the MicroLogix 1200 expands application coverage by allowing data elements to be selected according to individual application requirements.

Expand Your Choices with MicroLogix 1500

The MicroLogix 1500 has more robust features for a controller this size. It supports up to 12K of onboard non-volatile user memory to accommodate complex application program, with additional memory for applications that require data logging. Additionally, the controller's terminal blocks are removable, "finger-safe" NEMA-style blocks. And because it can be either DIN rail or panel mounted, the MicroLogix 1500 takes up a fraction of the space of larger controllers while reducing overall application costs.

Communications are flexible for the MicroLogix 1500 as well. DH-485 and DeviceNet™ capability are available via add-on communication modules, and DF1™ Full-Duplex and Half-Duplex Slave is perfect for SCADA applications. Ethernet® and ControlNet™ connectivity are available via a wide range of bridge products. Modbus RTU Slave capability simplifies integration into SCADA/RTU installations with the use ModBus.

The MicroLogix 1500 is programmed using the RSLogix™ 500 programming environment. The instruction set is compatible with all MicroLogix as well as SLC controllers.

MicroLogix 1500 and 1200 utilized as GSM RTU's

The advanced ASCII communication capabilities available in MicroLogix 1200 and 1500 controllers can be utilized in various applications. MicroLogix systems have been implemented in Australia communicating via GSM Modems over standard cell phone networks.

The 900/1800MHZ band GSM, (and now CDMA) cell phone network in Australia supports SMS (Short Message Service) text messaging. By configuring MicroLogix 1200 and 1500 units to a GSM Modem, the ASCII Read/Write and String Compare functions can send and receive text messages from Mobile phones anywhere in Australia within the GSM/CDMA network.

The installed controllers are being used to sense alarm and status information, which in turn, is transmitted to a cell phone number upon a pre-condition occurrence in memory. The text message transmitted appears on the receiver's cell phone display in a similar method to an alphanumeric pager.

While not implemented in our current installations, the receiver could also enter text on their cell phone and transmit back to the controller. The controller upon receipt of this message could decode the sender's phone number and also the message and perform a string comparison to find an identical string of text in memory. Once found, the controller could take appropriate action within it's program, such as turning devices on or off.

This would enable operators to respond to some low level alarms from a remote location via cell phone, and take appropriate action such as clearing or acknowledging low level alarms.

If the SIM card contained within the GSM modem (connected to the Micro) is data enabled, it could also log on and program the MicroLogix over the cell phone network at 9600 baud. (This has already been successfully demonstrated.)

There are current successful installations of both MicroLogix 1500 and 1200 units implemented as RTU's running off of GSM modems transmitting text to operator's cell phones.

Figure 1. A basic MicroLogix configuration.



The system displayed would recognize a fault and initiate a text message to the modem and to the SMS message service. The modem currently being used can also be powered via solar cells in remote areas, and also supports voice lines as well. Similar functionality is also available on several other Allen-Bradley PLC platforms.

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