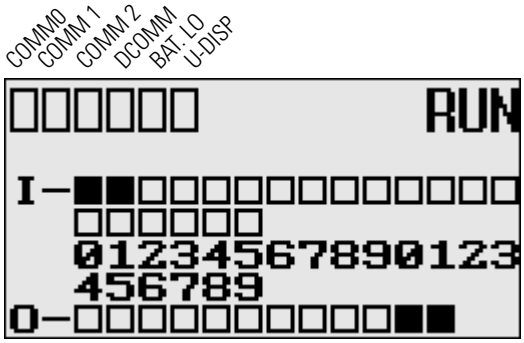
RTC Battery Operation

The real-time clock uses the same replaceable battery that the controller uses. The RTC Function File features a battery low indicator bit (RTC:0/BL), which shows the status of the replacement battery. When the battery is low, the indicator bit is set (1). This means that the battery wire connector could be disconnected or if the battery is connected, the battery may be ready to fail in the next two weeks. In the latter case, the replacement battery needs to be replaced with a new one. When the battery low indicator bit is clear (0), the battery level is acceptable.

The Battery Low (BAT.LO) indicator on the LCD display of the controller also shows the status of the replaceable battery. When the battery is low, the indicator is displayed as a solid rectangle (■). When the battery level is acceptable, the indicator is displayed as an empty rectangle (□), as shown below.



If the RTC battery is low and the controller is powered, the RTC operates normally. If the controller power is removed and the RTC battery is low, RTC data is lost.

ATTENTION: Operating with a low battery indication for more than 2 weeks may result in invalid RTC data unless power is on continuously.

Memory Module Operation

The memory module supports the following features:

- User Program, User Data, Datalog and Recipe Back-up
- User Program Compare
- Data File Download Protection
- Memory Module Write Protection
- Removal/Insertion Under Power

ATTENTION: Electrostatic discharge can damage the Memory Module. Do not touch the connector pins or other sensitive areas.

User Program , User Data, Datalog and Recipe Back-up

The memory module provides a simple and flexible program, data, DataLog, and Recipe transport mechanism, allowing the user to transfer the program, data, DataLog and Recipe to the controller without the use of a personal computer and programming software.

The memory module can store one user program at a time.

During program transfers to or from the memory module, the controller's RUN LED flashes.

Program Compare

The memory module can also provide application security, allowing you to specify that if the program stored in the memory module does not match the program in the controller, the controller will not enter an executing (run or test) mode. To enable this feature, set the S:2/9 bit in the system status file. See "Status System File" in the *MicroLogix 1400 Programmable Controllers Instruction Set Reference Manual*, Publication 1766-RM001 for more information.

Data File Download Protection

The memory module supports data file download protection. This allows user data to be saved (not overwritten) during a download.

TIP Data file download protection is only functional if the processor does not have a fault, size of all protected data files in the memory module exactly match the size of protected data files within the controller, and all protected data files are of the same type. See "Protecting Data Files During Download" in the *MicroLogix 1400 Programmable Controllers Instruction Set Reference Manual*, Publication 1766-RM001.

Memory Module Write Protection

The memory module supports write-once, read-many behavior. Write protection is enabled using your programming software.

IMPORTANT Once set, write protection cannot be removed. A change cannot be made to the control program stored in a write protected memory module. If a change is required, use a different memory module.

Removal/Insertion Under Power

The memory module can be installed or removed without risk of damage to either the memory module or the controller, except during a data transaction. If the memory module is removed during a data transaction, data corruption can occur.
If a memory module is installed while the MicroLogix 1400 is executing, the memory module is not recognized until either a power cycle occurs, or until the controller is placed in a non-executing mode (program mode, suspend mode or fault condition).

Memory Module Information File

The controller has a Memory Module Information (MMI) File which provides status from the attached memory module. At power-up or on detection of a memory module being inserted, the catalog number, series, revision, and type are identified and written to the MMI file. If a memory module is not attached, zeros are written to the MMI file. Refer to the *MicroLogix 1400 Instruction Set Reference Manual*, publication 1766-RM001, for more information.

Program /Data Download

To download the program and data from a memory module to the controller's memory, on the "Comms" menu in your RSLogix 500/RSLogix Micro programming software, point "EEPROM" and then click "Load from EEPROM".

TIP With MicroLogix 1400, you can also use the LCD and the LCD buttons on the module to transfer applications to or from the controller.

For more information on program/data download, refer to your RSLogix 500/RSLogix Micro programming software documentation.

Program /Data Upload

To upload the program and data from the controller's memory to a memory module, on the "Comms" menu in your RSLogix 500/RSLogix Micro programming software, point "EEPROM" and then click "Store to EEPROM".

TIP With MicroLogix 1400, you can also use the LCD and the LCD buttons on the module to transfer applications to or from the controller.

For more information on program/data upload, refer to your RSLogix 500/RSLogix Micro programming software documentation.