# PLC Memory

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In This Appendix. . . .
— DL105 PLC Memory

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When designing a PLC application, it is important for the PLC user to understand the different types of memory in the PLC. Two types of memory are used by the DL105 CPU, RAM and EEPROM. This memory can be configured by the PLC user as either retentive or non-retentive memory.

Retentive memory is memory that is configured by the user to maintain values through a power cycle or a PROGRAM to RUN transition. Non-retentive memory is memory that is configured by the PLC user to clear data after a power cycle or a PROGRAM to RUN transition. The retentive ranges can be configured with either the handheld programmer using AUX 57 or *Direct*SOFT (PLC Setup).

The contents of RAM memory can be written to and read from for an infinite number of times, but RAM requires a power source to maintain the contents of memory.The contents of RAM are maintained by the internal power supply (5VDC) only while the PLC is powered by an external source, normally 120VAC. When power to the PLC is turned off, the contents of RAM are maintained by a "Super-Capacitor". If the Super-Capacitor ever discharges, the contents of RAM will be lost. The data retention time of the Super-Capacitor backed RAM is 3 weeks maximum, and 4 1/2 days minimum (at 60° C).

The contents of EEPROM memory can be read from for an infinite number of times but there is a limit to the number of times it can be written to (typical specification is 100,000 writes). EEPROM does not require a power source to maintain the memory contents. It will retain the contents of memory indefinately.

PLC user V-memory is stored in both volatile RAM and non-volatile EEPROM memory. Data being stored in RAM uses V2000-V2377. Data stored in EEPROM uses V4000-V4177 and V7630-V7647.

Data values that must be retained for long periods of time, when the PLC is powered off, should be stored in EEPROM based V-memory.

Data values that are continually changing or which can be initialized with program logic should be stored in RAM based V-memory.