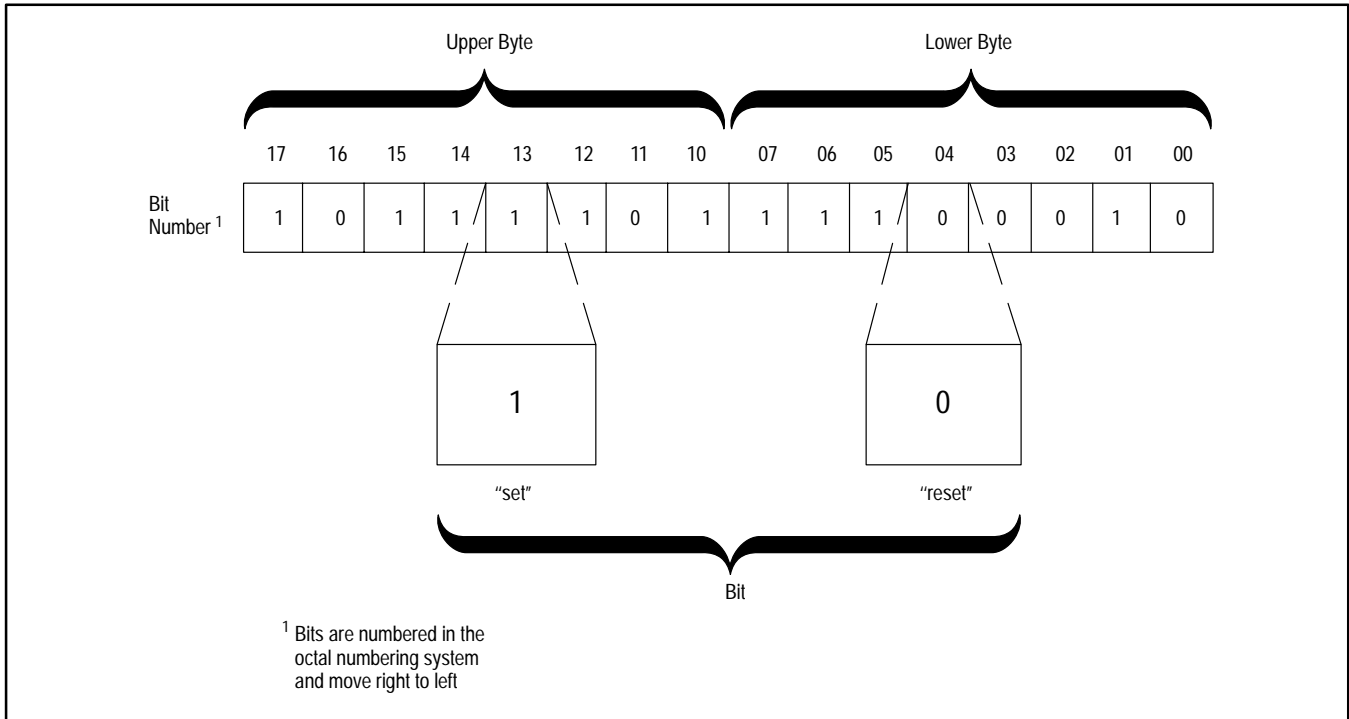


Figure 2.1
Structure of a Memory Word that Stores and Transmits Complete Units
of Information



A group of eight bits forms a **byte**. A byte is defined as the smallest complete unit of information that can be transmitted to or from the processor at a given time.

A group of 6 bits makes up a **word**. A word can be thought of as being made up of two or four 8-bit bytes. The total number of words in the processor gives you the basis for the memory size, with 1K equal to 1,024 words.

The processor Chassis (cat. no 1775-A1, -A2, -A3) for PLC-3 family controllers must contain a memory module that contains the memory for the processor. Four memory modules are currently available:

Catalog Number	Contains
1775-ME4, -MS4	16K or 16,384 words
1775-ME8, -MS8	32K or 32,768 words
1775-MEA, -MSA	64K or 65,536 words
1775-MED	128K or 131,072 words

2.2 Interface Between Ladder Program and Hardware

Later in this chapter we explain the organization of memory. Before doing so, this section explains how the controller uses machine data, sensed by 1771 input modules to turn output devices on or off with 1771 output modules. This hardware-program interface occurs between two areas in memory:

- Data table which stores status and numeric data
- Ladder program which stores instruction that you use to control your application

2.2.1 I/O Image Tables in the Data Table

Within the data table, input and output image tables store the status of input and output devices connected to 1771 I/O modules. The primary purpose of the input image table is to duplicate the status of the input devices wired to 1771 input module terminals:

If the input device is	Then its corresponding input image table bit is
on	set
off	reset

You program instruction in the ladder program to monitor bits in the input image table.

The purpose of the output image table is to control the status of output devices wired to 1771 output module terminals:

If an output image bit is	Then its corresponding output device is
set	on
reset	off

You can program instructions in the ladder program to control bits in the output image table.

2.2.2 Addressing Instructions

In programming instructions, you enter a code or an address that references an I/O image table location in the data table which corresponds to a hardware location in a 1771 I/O chassis

We describe instruction addressing in chapters 3 and 4.