



## **Allen-Bradley Series D Mini-PLC-2/02, -2/16, -2/17 Processors**

(Cat. No. 1772-LZ, -LZP, -LX, -LXP, -LW, -LWP)

### Documentation Update

#### **Use This Document With**

The Product Data for the Mini-PLC-2/02, -2/16,-2/17 Processors, publication 1772-2.27 dated April 1988. This document supplements your product data sheet and should be kept with it.

Changes to the sections in the existing product data sheet will be explained below under the appropriate section title.

#### **Purpose of this Update**

The purpose of this documentation update is to provide you with information about the additional features of the Series D processors.

#### **Processor Features**

- The Series D release increases memory in the processors to:
  - 2K RAM in Mini-PLC-2/02
  - 4K RAM in Mini-PLC-2/16
  - 7.75K RAM in Mini-PLC-2/17
- The maximum number of timers for the Mini-PLC-2/02 is increased to 488.
- The maximum number of counters (using ALL available memory) is:
  - 640 in Mini-PLC-2/02
  - 1280 in Mini-PLC-2/16
  - 2560 in Mini-PLC-2/17
- Scan rate is improved to 7.5 msec/K (minimum) and 12 msec/K (typical application program).

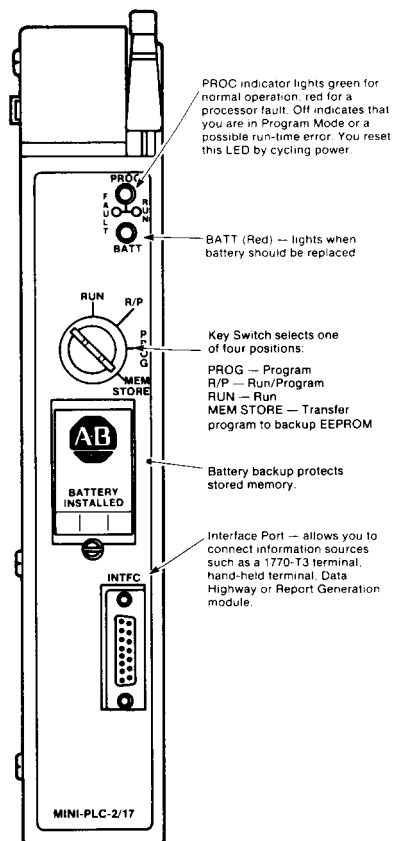
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- The Mini-PLC-2/02, -2/16, -2/17 processors can perform: EAF functions (12-digit addition and subtraction, 6-digit multiplication and division), square root, BCD/Binary conversions, FIFO Load and Unload, Log 10 ,sine, cosine and 10 x .
- The Mini-PLC-2/17 can also perform these additional functions: Log e, y+/- x and e+/- x, reciprocal of x, averaging, standard deviation, PID, wall clock and calendar.

## Processors

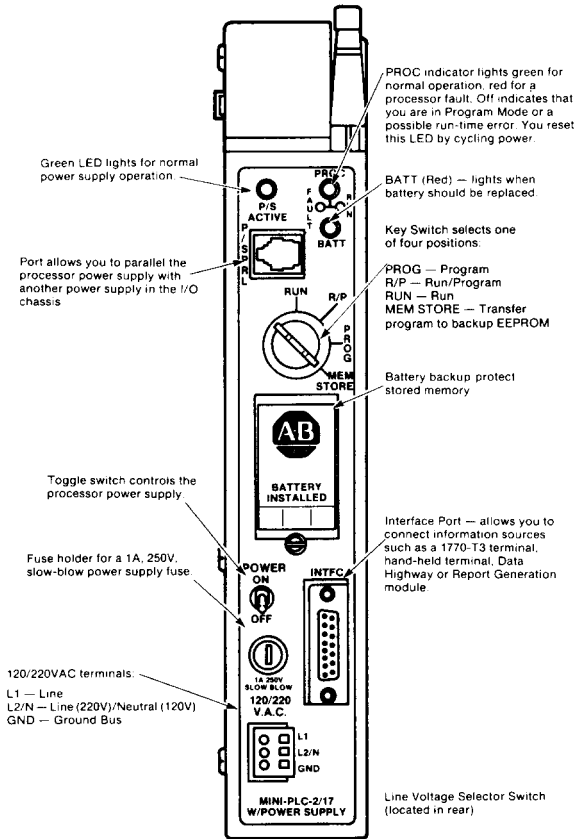
Figures 2 and 3 have changed due to the new appearance of the Series D processors.

**Figure 2**  
**Without a Power Supply**



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**Figure 3**  
**With a Power Supply**



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## Modes of Operation

You can place the processor in any one of four modes of operation with the four-position key switch located on the front of the processor. The Series D release added this fourth position: MEM STORE.

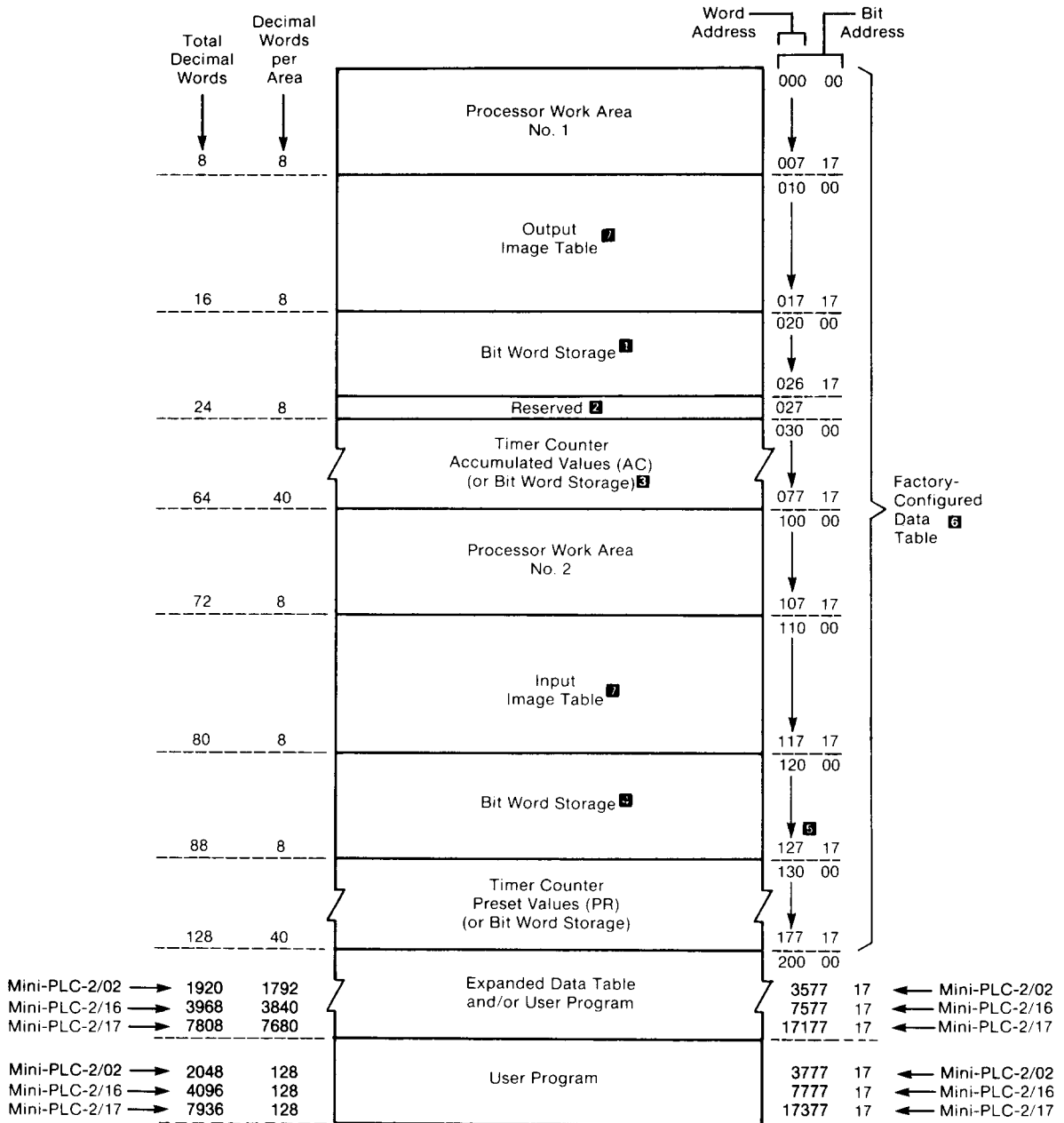
**MEM STORE** – The processor will load your program to be backed up by EEPROM when you switch to this position, then to PROG, then back to the MEM STORE position within one second.

(The functions of the other keyswitch positions remain unchanged.)

**Programming**

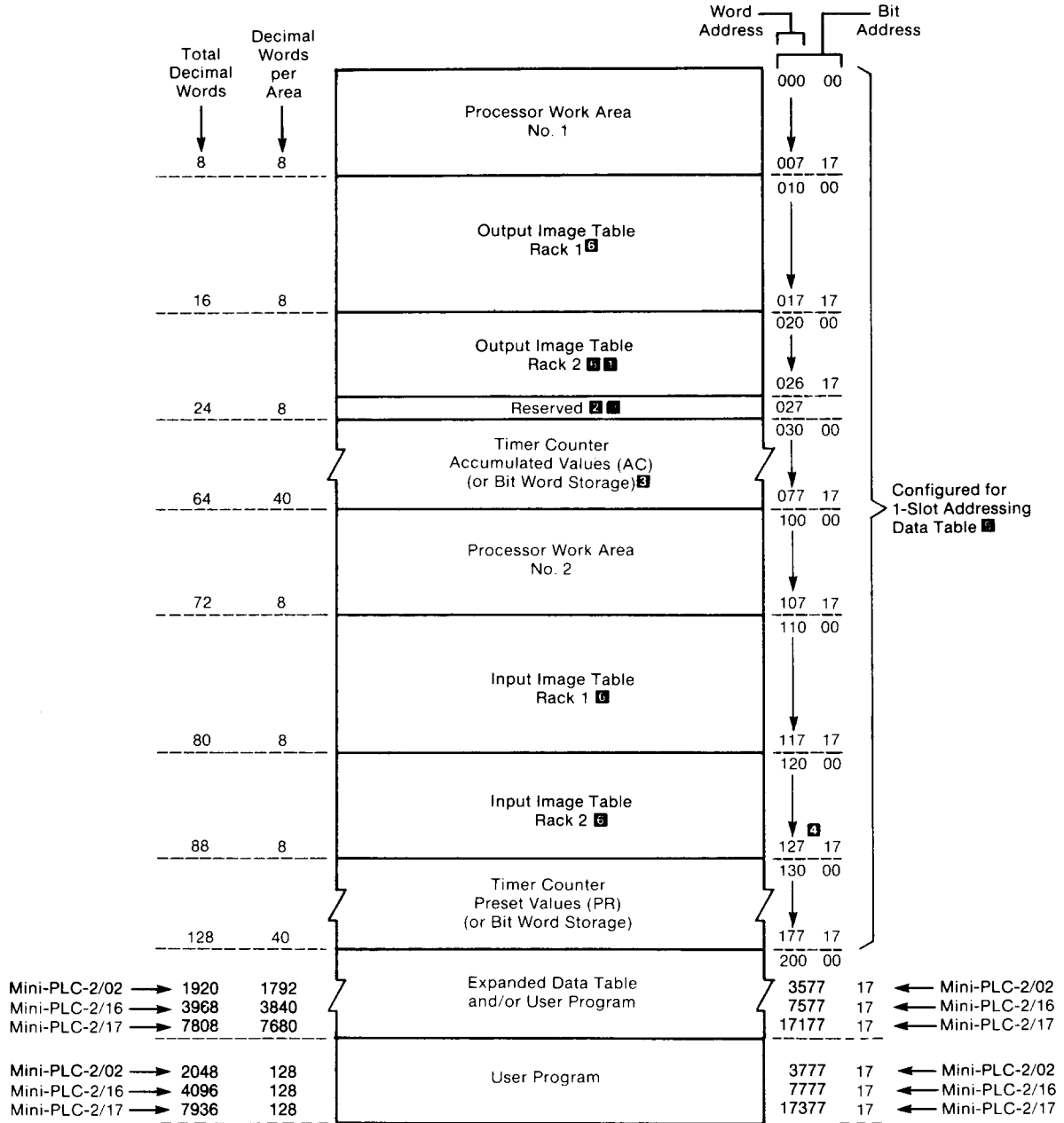
Figures 4 through 6 have changed to reflect the increased memory of the Series D processors.

**Figure 4**  
**Factory Configured Data Table**



- <sup>1</sup> May not be used for accumulated values.
- <sup>2</sup> Not available for bit/word storage
- <sup>3</sup> Unused timer/counter memory words can reduce data table size and increase user program area
- <sup>4</sup> May not be used for preset values
- <sup>5</sup> Do not use word 127 for block transfer data storage.
- <sup>6</sup> Can be decreased to 48 words.
- <sup>7</sup> Do not use for bit/word storage.

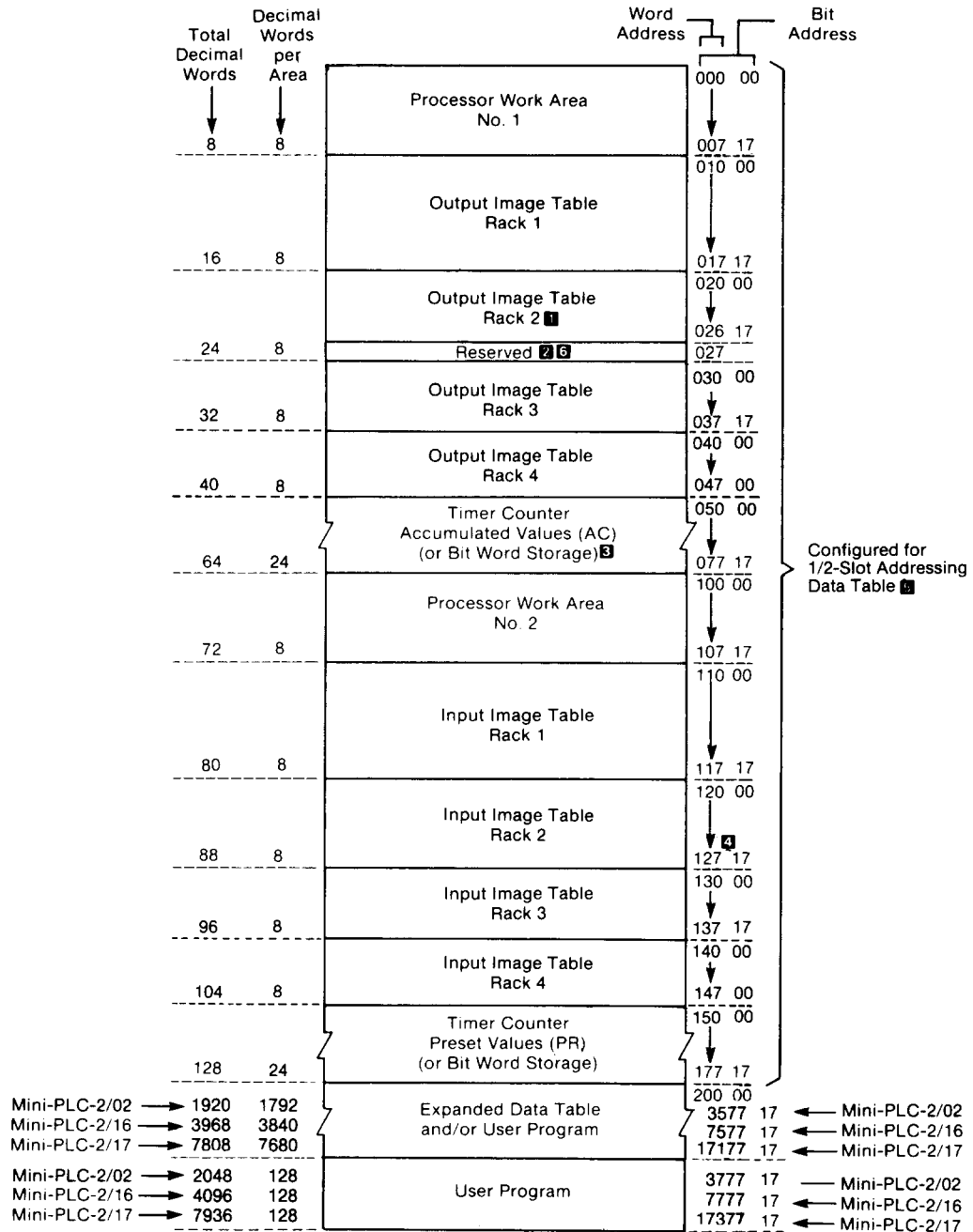
**Figure 5**  
**Data Table Organization When Selecting 1-Slot Addressing**



- 1** May not be used for accumulated values.
- 2** Not available for bit/word storage. Bits in this word are used by the processor.
- 3** Unused timer/counter memory words can reduce data table size and increase user program area.
- 4** Do not use word 127 for block transfer data storage.
- 5** Can be decreased to 48 words.
- 6** Used with 1-slot addressing.
- 7** You cannot put an output or block transfer module in rack 2, I/O group 7 when using 1-slot addressing. You can put an input module in rack 2, I/O group 7.

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**Figure 6**  
**Data Table Organization When Selecting 1/2-Slot Addressing**



- <sup>1</sup> May not be used for accumulated values.
- <sup>2</sup> Not available for bit/word storage. Bits in this word are used by the processor.
- <sup>3</sup> Unused timer/counter memory words can reduce data table size and increase user program area.
- <sup>4</sup> Do not use word 127 for block transfer data storage.
- <sup>5</sup> Can be decreased to 48 words.
- <sup>6</sup> You cannot put an output or block transfer module in rack 2, I/O group 7 when using 1/2-slot addressing. You can put an input module in rack 2, I/O group 7.

## Selectable Timed Interrupt

The Series D processors allow you to set the timed interval between successive executions of the subroutine to any whole number from 1 to 999 ms.

## Specifications

	Mini-PLC-2/02 Processor without a power supply	Mini-PLC-2/16 Processor without a power supply	Mini-PLC-2/17 Processor without a power supply
<b>Location</b>	1771 I/O chassis left most slot		
<b>Backplane Current</b>	1.25 A Requirement		
<b>Battery Back-up</b>	Self-contained lithium battery maintains memory for 1 year with no AC applied to the processor		
<b>Data Table Size</b>	48-1920 Floating words	48-3968 Floating words	48-7808 Floating words
<b>Memory Size</b> 16-bit words RAM	2K	4K	7.75K
<b>I/O Scan</b>	0.82 ms (2-slot addressing) 2.00 ms (1-slot addressing) 2.15 ms (½-slot addressing)		
<b>Program Scan</b>	7.5 ms/K (minimum) 12 ms (typical application program)		
<b>I/O Capacity (Typical)</b> Bulletin 1771 I/O	128	256	256 - 512 (maximum)
<b>Mode Selection</b>	Key switch on the front panel and from the keyboard of the 1770-T3 terminal		
<b>Environmental Conditions</b>			
Operating Temperature	0 to 60° C (32 to 140° F)		
Storage Temperature	-40 to 85° C (-40 to 185° F)		
Relative Humidity	5% to 95% (without condensation)		
<b>Keying</b> <b>(top connector)</b>	Between 46 and 48 Between 54 and 56		

	Mini-PLC-2/02 Processor with a power supply	Mini-PLC-2/16 Processor with a power supply	Mini-PLC-2/17 Processor with a power supply
	These processors have the same features as those listed on the previous page but these also have a self-contained power supply		
<b>Input Voltage</b>	120/220 V AC (switch selectable)		
<b>Input Voltage Range</b>	97 to 132 V AC 194 to 264 V AC		
<b>Nominal Input Power</b>	96 VA		
<b>Frequency</b>	47 to 63 Hz		
<b>Output Current to Backplane</b>	4 A		
<b>Keying</b> <b>(top connector)</b>	Between 46 and 48 Between 54 and 56		

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