

**ALLEN-BRADLEY**

## **Allen-Bradley PLC-3/10 Processor Module**

(Cat. No. 1775-L4)

### Product Data



### **Getting More Control From the PLC-3/10 Controller**

When it comes to programmable controllers, the more power you can put into a chassis slot, the more control potential you have. The PLC-3/10 Programmable Controller Processor Module (cat. no. 1775-L4) gives you the control you need.

Like the Main Processor Module (cat. no. 1775-L3) for the PLC-3 controller, the 1775-L4 module is a single-slot processor module that controls the program execution and memory management functions for the PLC-3/10 controller.

## Product Data

### PLC-3/10 Processor Module

The benefits, features, and functions for the 1775-L4 module are outlined below:

| Features                                                             | Benefits                                                                          | Functions                                                                                                                  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Over 70 programming instructions                                     | Efficient programming                                                             | Makes PLC-3/10 controller a powerful processor                                                                             |
| Completely flexible data table                                       | Amount of data table that you can use is limited only by available memory         | Expandable to accommodate data                                                                                             |
| High-speed program scan                                              | Efficient use of microprocessor time                                              | Processes only the parts of the control program that are currently needed                                                  |
| Program control instructions:                                        | Efficient use of processor time through the control program                       | Enables you to change order of program execution                                                                           |
| ▪ JMP                                                                | Allows you to examine specific information at a specified time                    | Requests a subroutine at selected timed intervals                                                                          |
| ▪ JSR                                                                | Allows you to react to a major fault, possibly preventing processor from faulting | Executes a routine before processor faults                                                                                 |
| ▪ MCR                                                                | Allows you to retain and make calculations with extremely large and small numbers | Executes arithmetic functions in decimal ranging from -32,768 to 32,767                                                    |
| Timed interrupt routine                                              | Allows you to retain accuracy for precise calculations                            | Executes arithmetic functions in scientific notation ranging from $\pm 2.939 \text{ E } -39$ to $\pm 1.701 \text{ E } +38$ |
| Programmable fault response                                          | Allows you to record and handle numbers for your production counts and inventory  | Handles values stored as 32-bit signed integers ranging from -2,147,483,648 to +2,147,483,647                              |
| Integer math                                                         | Enables you to quickly change from one program to another by changing contexts    | Stores multiple programs in one processor                                                                                  |
| Floating point math                                                  | Does not require an external means for timed programs and reports                 | Programs and procedures access:                                                                                            |
| Double-precision integer math                                        | Easy troubleshooting                                                              | ▪ time                                                                                                                     |
| Multiple contexts (not offered on any other programmable controller) |                                                                                   | ▪ date                                                                                                                     |
| Real-time:                                                           |                                                                                   | Continuously checks modules to determine if the processor is functioning properly                                          |
| ▪ clock                                                              |                                                                                   |                                                                                                                            |
| ▪ calendar                                                           |                                                                                   |                                                                                                                            |
| On-board diagnostics and diagnostic indicators:                      |                                                                                   |                                                                                                                            |
| ▪ green (pass)                                                       |                                                                                   |                                                                                                                            |
| ▪ red (fail)                                                         |                                                                                   |                                                                                                                            |

## Using the PLC-3/10 Instruction Set

The 1775-L4 processor module supports the same instruction set supported by the Main Processor Module (cat. no. 1775-L3).



**WARNING:** Remove system power before removing or inserting the 1775-L4 processor module in the PLC-3/10 chassis. Failure to observe this warning could result in damage to PLC-3/10 components and/or undesired operation with injury to personnel.

**Important:** Do not insert the 1775-L4 processor module into the PLC-3 Main Processor Chassis (cat. no. 1775-A1, -A2). The 1775-L4 processor module is not compatible with the PLC-3 programmable controller.

The PLC-3/10 instruction set includes:

|                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>▪ relay type instructions:</b>                                                                                                                                                                                               |                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>- examine on</li> <li>- examine off</li> <li>- output energize</li> <li>- output latch</li> <li>- output unlatch</li> <li>- input branch start</li> <li>- output branch start</li> </ul> | <ul style="list-style-type: none"> <li>- branch end</li> <li>- examine indexed bit ON</li> <li>- examine indexed bit OFF</li> <li>- set indexed bit ON I</li> <li>- latch indexed bit</li> <li>- unlatch indexed bit</li> </ul> |
| <b>▪ timer and counter instructions:</b>                                                                                                                                                                                        |                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>- ON delay timer</li> <li>- OFF delay timer</li> <li>- retentive timer</li> <li>- timer reset</li> </ul>                                                                                 | <ul style="list-style-type: none"> <li>- up counter</li> <li>- down counter</li> <li>- counter/timer reset</li> </ul>                                                                                                           |
| <b>▪ arithmetic instructions:</b>                                                                                                                                                                                               |                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>- add</li> <li>- multiply</li> <li>- subtract</li> <li>- divide</li> <li>- square root</li> <li>- negate</li> </ul>                                                                      | <ul style="list-style-type: none"> <li>- file add</li> <li>- file multiply</li> <li>- file subtract</li> <li>- file divide</li> <li>- file square root</li> <li>- file negate</li> </ul>                                        |
| <b>▪ logical instructions:</b>                                                                                                                                                                                                  |                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>- logical AND</li> <li>- logical OR</li> <li>- logical exclusive OR</li> <li>- logical complement</li> </ul>                                                                             | <ul style="list-style-type: none"> <li>- logical AND with files</li> <li>- logical OR with files</li> <li>- logical exclusive OR with files</li> <li>- logical complement with files</li> </ul>                                 |