

Logix5000 Controllers Execution Time and Memory Use Reference Manual

1756 ControlLogix, 1768 CompactLogix, 1769 CompactLogix, 20D PowerFlex 700S with DriveLogix

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.ab.com/manuals/gi>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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About this manual

Use these worksheets to estimate the memory use and execution time of your logic. Use this information to select among different programming options.

The memory use of a project is the same regardless of which Logix5000 controller you are using (CompactLogix, FlexLogix, etc). However the execution times vary based on controller type.

The numbers in these worksheets are based on revision 17 of the controller firmware. Actual results may vary because of the configuration of your project and the revision of software and firmware that you are using.

Important

The 1756-L63 controller uses a cache mechanism to enhance the performance of instructions. Actual performance depends on how sequentially the data is laid out and how frequently it is accessed.

Caching has a significant impact on the execution times of bit instructions (XIC, XIO, OTE, OTU, OTL). For example, an XIC instruction has a best case execution time of 0.05 μ s, where the project takes full advantage of caching. The XIC instruction has a worst-case execution time of 0.4 μ s, where the project uses minimal caching. The typical execution time of an XIC instruction is approximately 0.1 μ s.

When you download your project, the controller optimizes memory use, which could reduce your calculated memory use by as much as 10% from the values presented in this worksheet.

Ladder Instructions

Here are some examples for a 1756-L63 controller:

| Example | Data Type | Memory (bytes) | Execution Time (µs) | Description |
|-------------|-----------|----------------|---------------------|-----------------|
| ADD | DINT | 28 | 0.26 | ADD instruction |
| Source A | DINT | | | |
| Source B | DINT | | | |
| Destination | DINT | | | |
| | | 28 | 0.26 | Total |

Array subscripts When an array uses a tag for one of its subscripts (e.g., Array_A[Tag_B]), additional memory and execution time is required, depending on the number of dimensions in the array. Memory use and execution time for an instruction increases for each parameter that references an array.

| Example | Data Type | Memory (bytes) | Execution Time (µs) | Description |
|-------------|------------|----------------|---------------------|-----------------|
| ADD | DINT | 28 | 0.26 | ADD instruction |
| Source A | DINT[DINT] | 84 | 0.69 | array subscript |
| Source B | DINT | | | |
| Destination | DINT | | | |
| | | 112 | 0.95 | Total |

Expressions If an instruction contains an expression (CMP, CPT, FAL, FSC), then add memory and time for each operator in the expression. For each operator, use the values for the corresponding instruction.

Here is an example for a 1756-L63 controller:

| Example | Data Type | Memory (bytes) | Execution Time (µs) | Description |
|---------------------|-----------|----------------|---------------------|-----------------|
| CPT (tag_a + tag_b) | | 80 | 1.66 | CPT instruction |
| ADD (+) | DINT | 28 | 0.26 | ADD operator |
| | | 108 | 1.92 | Total |

Data conversions Logix5000 controllers typically compare or manipulate values as DINTs or REALs (optimal data type).

If you use a data type that is not an optimal data type or if you mix data types, you must add memory and execution time for data conversion.

If you use mix integers and REALs in an instruction, the controller converts the values to REALs and then back to the destination data type.

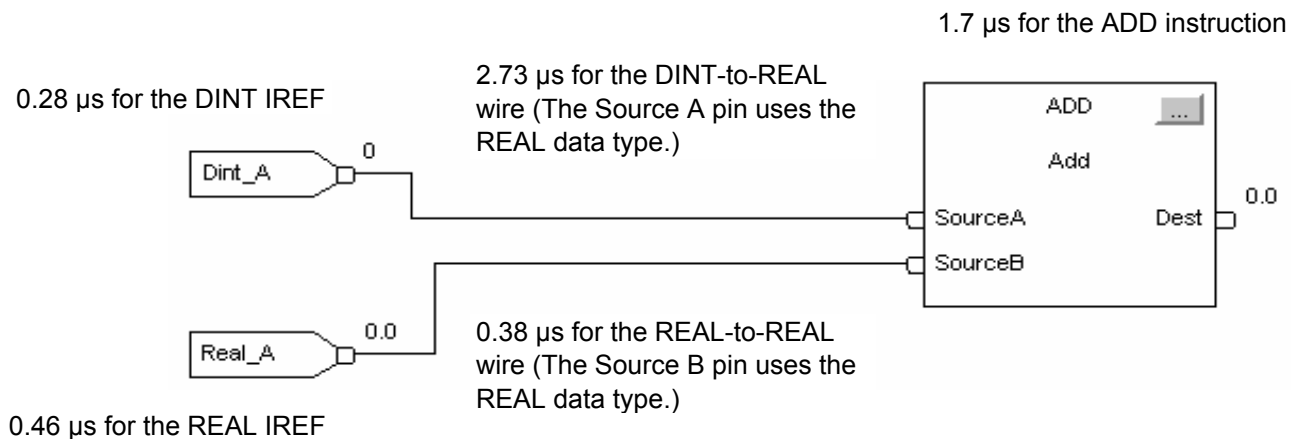
| Example | Data Type | Memory (bytes) | Execution Time (μs) | Description |
|-------------|-----------|----------------|---------------------|-------------------------|
| ADD | REAL | 44 | 1.53 | ADD instruction |
| Source A | DINT | 96 | 2.51 | DINT to REAL conversion |
| Source B | REAL | | | |
| Destination | REAL | | | |
| | | 140 | 4.04 | Total |
| ADD | REAL | 44 | 1.53 | ADD instruction |
| Source A | DINT | 96 | 2.51 | DINT to REAL conversion |
| Source B | REAL | | | |
| Destination | DINT | 92 | 3.62 | REAL to DINT conversion |
| | | 232 | 7.66 | Total |
| ADD | DINT | 28 | 0.26 | ADD instruction |
| Source A | INT | 80 | 0.52 | INT to DINT conversion |
| Source B | INT | 80 | 0.52 | INT to DINT conversion |
| Destination | INT | 72 | 2.35 | DINT to INT conversion |
| | | 260 | 3.65 | Total |

Function Block Elements

Function block elements include the following:

- Function Block Instructions -** These times include only the time for the instruction. They do not include time for IREFs, OREFs, or wires. Use the same times regardless of whether the function block is in a function block diagram or structured text.
- IREFs and OREFs -** Choose the time for the IREF or OREF based on the data type of its tag. Do not add any time for immediate values.
- Wires -** Choose the time for a wire based on the data type at each end of the wire pin).

Here is an example of a function block diagram for a 1756-L63 controller:



Structured Text

The number and complexity of the assignments, instructions, and comments included in the construct increases the memory and execution time that are required.

Here's examples for a 1756-L63 controller:

| Example | Data Type | Memory (bytes) | Execution Time (µs) | Description |
|-----------------|-----------|----------------|---------------------|-------------------|
| Tag_A := Tag_B; | DINT | 86 | 0.27 | Simple assignment |

| Example | Data Type | Memory (bytes) | Execution Time (µs) | Description |
|-------------------------|-----------|----------------|---------------------|---|
| Tag_A := Tag_B + Tag_C; | | | | Complex assignment. Use the numbers for the CPT instruction plus the numbers for the ADD instruction. |
| CPT | DINT | 76 | 1.65 | Memory and time for the CPT instruction |
| ADD (+) | DINT | 28 | 0.26 | Memory and time for the ADD instruction |
| | | 104 | 1.91 | Total |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------|------------------|--------------------|------------------|----------------|------------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62. -63 | | 1756-L64, -L65 | |
| ABL | n/a | | 48 | 44 | 44 | 8.91 | | 3.10 | | 6.18 | |
| ABS | DINT | | 44 | 32 | 32 | 0.35 | | 0.28 | | 0.38 | |
| ABS | REAL | | 68 | 56 | 56 | 0.51 | | 0.41 | | 0.51 | |
| ACB | n/a | | 48 | 44 | 52 | 7.14 | | 6.16 | | 7.20 | |
| ACL | n/a | | 56 | 56 | 64 | 68.59 | | 57.59 | | 60.00 | |
| ACS | REAL | | 60 | 48 | 48 | 37.99 | | 31.53 | | 31.70 | |
| ADD | DINT | | 48 | 28 | 28 | 0.30 | | 0.26 | | 0.44 | |
| ADD | REAL | | 64 | 44 | 44 | 1.82 | | 1.53 | | 1.71 | |
| AFI | n/a | | 4 | 4 | 4 | 0.04 | | 0.03 | | 0.01 | |
| AHL | n/a | | 64 | 60 | 68 | 5.97 | | 7.86 | | 9.98 | |
| ALMA | n/a | .In is true, Alarm state doesn't change (input value doesn't change alarm level) | 284 | | 264 | 18.3 | | 21.4 | | 20.5 | |
| ALMA | n/a | HAlarm triggered | 284 | | 264 | 117.1 | | 98.3 | | 100.0 | |
| ALMA | n/a | HHAlarm triggered | 284 | | 264 | 141.1 | | 116.1 | | 119.6 | |
| ALMA | n/a | .In = FALSE | 284 | | 264 | 18.1 | | 19.9 | | 17.3 | |
| ALMD | n/a | Alarm state doesn't change (T>T or F>F) | 320 | | 304 | 9.50 | | 8.40 | | 8.60 | |
| ALMD | n/a | Alarm state changes (T>F or F>T) | 320 | | 304 | 36.10 | | 38.90 | | 40.90 | |
| AND | DINT | | 48 | 28 | 28 | 0.26 | | 0.25 | | 0.41 | |
| ARD | n/a | | 72 | 64 | 76 | 12.21 | | 4.87 | | 9.98 | |
| ARL | n/a | | 72 | 64 | 76 | 7.33 | | 6.20 | | 10.24 | |
| ASN | REAL | | 60 | 48 | 48 | 36.37 | | 30.29 | | 30.41 | |
| ATN | REAL | | 60 | 48 | 48 | 25.65 | | 21.47 | | 21.60 | |
| AVE | DINT | x = Length | 176 | 164 | 116 | 17.11 | | 14.27 | + (x * 2.4) | 14.28 | + (x * 2.4) |
| AVE | INT | x = Length | 128 | 116 | 116 | 17.17 | | 14.45 | + (x * 2.5) | 14.14 | + (x * 2.5) |
| AVE | REAL | x = Length | 128 | 116 | 116 | 15.23 | | 12.45 | + (x * 3.3) | 12.34 | + (x * 3.3) |
| AVE | SINT | x = Length | 128 | 116 | 116 | 17.42 | | 14.29 | + (x * 2.4) | 14.39 | + (x * 2.4) |
| AWA | n/a | | 76 | 68 | 68 | 45.14 | | 32.62 | | 33.98 | |
| AWT | n/a | | 76 | 68 | 68 | 44.47 | | 32.04 | | 34.30 | |
| BRK | n/a | | 44 | | 44 | | | n/a | | n/a | |
| BSL | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | 2.77 | + ((x/32) * 0.2) | 2.36 | + ((x/32) * 0.2) | 2.43 | + ((x/32) * 0.2) |
| BSR | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | 3.00 | + ((x/32) * 0.2) | 2.55 | + ((x/32) * 0.2) | 2.64 | + ((x/32) * 0.2) |
| BTD | DINT | | 64 | 52 | 52 | 3.34 | | 2.81 | | 2.92 | |
| CLR | DINT | | 24 | 20 | 20 | 0.17 | | 0.16 | | 0.18 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|--------------|--------------------|--------------|----------------|--------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62, -63 | | 1756-L64, -L65 | |
| CLR | REAL | | 24 | 20 | 20 | 0.20 | | 0.19 | | 0.21 | |
| CMP | n/a | e = time for the operators in the expression | 92 | 76 | 76 | 1.72 | + e | 1.45 | + e | 1.45 | + e |
| CONCAT | n/a | x = number of characters in Source A + number of characters in Source | 120 | 108 | 116 | 3.10 | + (x * 0.2) | 2.29 | + (x * 0.2) | 2.35 | + (x * 0.2) |
| COP | DINT | | 72 | 64 | 64 | 3.59 | + (x * 0.2) | 3.03 | + (x * 0.2) | 3.06 | + (x * 0.2) |
| COP | INT | | 72 | 64 | 64 | 3.36 | + (x * 0.1) | 2.83 | + (x * 0.1) | 2.86 | + (x * 0.1) |
| COP | REAL | | 72 | 64 | 64 | 3.60 | + (x * 0.2) | 3.02 | + (x * 0.2) | 3.07 | + (x * 0.2) |
| COP | SINT | | 72 | 64 | 64 | 3.42 | + (x * 0.04) | 2.94 | + (x * 0.04) | 2.98 | + (x * 0.04) |
| COS | REAL | | 152 | 140 | 48 | 31.05 | | 25.70 | | 25.81 | |
| CPS | DINT | x = Length | 72 | | 64 | 5.53 | + (x * 0.2) | 4.6 | + (x * 0.2) | 4.6 | + (x * 0.2) |
| CPS | INT | x = Length | 72 | | 64 | 5.27 | + (x * 0.1) | 4.5 | + (x * 0.1) | 4.4 | + (x * 0.1) |
| CPS | REAL | x = Length | 72 | | 64 | 5.53 | + (x * 0.2) | 4.6 | + (x * 0.2) | 4.6 | + (x * 0.2) |
| CPS | SINT | | 72 | 64 | 64 | 5.36 | + (x * 0.4) | 4.53 | + (x * 0.04) | 4.59 | + (x * 0.04) |
| CPT | n/a | e = time for the operators in the expression | 80 | 96 | | 1.97 | + e | 1.66 | + e | 1.66 | + e |
| CTD | Counter | | 12 | 8 | 8 | 0.21 | | 0.19 | | 0.23 | |
| CTU | Counter | | 12 | 8 | 8 | 0.21 | | 0.18 | | 0.23 | |
| DDT | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 4.89 | + (x * 0.4) | 3.99 | + (x * 0.4) | 4.20 | + (x * 0.4) |
| DDT | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 9.53 | + (x * 0.4) | 7.70 | + (x * 0.4) | 7.82 | + (x * 0.4) |
| DDT | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 13.46 | + (x * 0.4) | 11.06 | + (x * 0.4) | 11.20 | + (x * 0.4) |
| DEG | REAL | | 64 | 52 | 52 | 1.88 | | 1.59 | | 1.68 | |
| DELETE | n/a | x = number of Destination characters | 108 | 100 | 100 | 2.81 | + (x * 0.2) | 2.17 | + (x * 0.2) | 2.56 | + (x * 0.2) |
| Digital | Static | | | | | | | 8.40 | | 8.60 | |
| Digital | Dynamic | | | | | | | 38.90 | | 40.90 | |
| DIV | DINT | | 64 | 44 | 44 | 6.11 | | 5.12 | | 5.30 | |
| DIV | REAL | | 64 | 44 | 44 | 2.30 | | 1.94 | | 2.12 | |
| DTOS | n/a | x = number of Destination characters | 76 | 64 | 64 | 8.49 | + (x * 0.1) | 7.29 | + (x * 0.1) | 7.34 | + (x * 0.1) |
| DTR | DINT | | 60 | 40 | 40 | 1.19 | | 1.01 | | 1.12 | |
| EOT | | | 56 | 52 | 52 | 2.8 | | 2.6 | | 2.9 | |
| EQU | DINT | | 36 | 20 | 20 | 0.21 | | 0.18 | | 0.34 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|--------------------------------|-------------------|--------------------|-------------------|----------------|-------------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62, -63 | | 1756-L64, -L65 | |
| EQU | REAL | | 36 | 20 | 20 | 0.27 | | 0.18 | | 0.33 | |
| EVENT | | | 44 | NA | 44 | 17.7 | | 15.7 | | 16.2 | |
| FAL | n/a | | 132 | 116 | 108 | 6.16 | + (x * 2.2) | 4.84 | + (x * 1.7) | 4.80 | + (x * 1.7) |
| FAL | REAL | | | | | | | | | | |
| FBC | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 5.00 | + (x * 0.4) | 4.10 | + (x * 0.4) | 4.33 | + (x * 0.4) |
| FBC | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 9.01 | + (x * 0.4) | 7.49 | + (x * 0.4) | 7.56 | + (x * 0.4) |
| FBC | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 12.89 | + (x * 0.4) | 10.40 | + (x * 0.4) | 10.67 | + (x * 0.4) |
| FFL | DINT | | 80 | 60 | 64 | 3.71 | | 3.10 | | 3.23 | |
| FFL | INT | | 80 | 64 | 64 | 3.92 | | 3.28 | | 3.41 | |
| FFL | REAL | | 80 | 64 | 64 | 3.70 | | 3.10 | | 3.24 | |
| FFL | SINT | | 80 | 64 | 64 | 3.56 | | 3.00 | | 3.13 | |
| FFU | DINT | x = Length | 76 | 64 | 64 | 4.35 | + (x * 0.2) | 3.67 | + (x * 0.2) | 3.77 | + (x * 0.2) |
| FFU | INT | x = Length | 76 | 64 | 64 | 4.28 | + (x * 0.3) | 3.56 | + (x * 0.3) | 3.64 | + (x * 0.3) |
| FFU | REAL | x = Length | 76 | 64 | 64 | 4.38 | + (x * 0.2) | 3.68 | + (x * 0.2) | 3.75 | + (x * 0.2) |
| FFU | SINT | x = Length | 76 | 64 | 64 | 3.97 | + (x * 0.2) | 3.33 | + (x * 0.2) | 3.42 | + (x * 0.2) |
| FIND | n/a | | 112 | 100 | 100 | 2.31 | | 1.86 | | 1.98 | |
| FLL | DINT | x = Length | 72 | 60 | 60 | 2.65 | + (x * 0.1) | 2.24 | + (x * 0.1) | 2.36 | + (x * 0.1) |
| FLL | INT | x = Length | 72 | 60 | 60 | 2.33 | + (x * 0.1) | 1.96 | + (x * 0.1) | 2.07 | + (x * 0.1) |
| FLL | REAL | x = Length | 72 | 60 | 60 | 2.67 | + (x * 0.1) | 2.24 | + (x * 0.1) | 2.36 | + (x * 0.1) |
| FLL | SINT | x = Length | 72 | 60 | 60 | 2.23 | + (x * 0.1) | 1.88 | + (x * 0.1) | 2.00 | + (x * 0.1) |
| FOR | DINT | x = Terminal value/Step size | 72 | 64.00 | 68 | 6.32 | + (x * 2.8) | 5.41 | + (x * 2.3) | 5.27 | + (x * 2.4) |
| FRD | n/a | | 52 | 40 | 40 | 3.66 | | 3.07 | | 3.19 | |
| FSC | n/a | x = length of file, e = execution time for compare expression | 152 | 140 | 140 | 6.21 | + (x * (2.2 + e)) | 4.86 | + (x * (1.8 + e)) | 4.95 | + (x * (1.8 + e)) |
| GEQ | DINT | | 36 | 20 | 20 | 0.21 | | 0.18 | | 0.34 | |
| GEQ | REAL | | 52 | 36 | 36 | 0.36 | | 0.28 | | 0.43 | |
| GRT | DINT | | 36 | 20 | 20 | 0.21 | | 0.18 | | 0.34 | |
| GRT | REAL | | 52 | 36 | 36 | 0.37 | | 0.28 | | 0.43 | |
| GSV | n/a | | 84.0 | 76 | 76 | <u>See GSV SSV Attributes.</u> | | | | | |
| INSERT | n/a | x = number of Destination characters | 128 | 116 | 116 | 3.46 | + (x * 0.2) | 2.83 | + (x * 0.2) | 3.32 | + (x * 0.2) |
| IOT | n/a | | 60 | NA | 60 | 3.4 | | 4.4 | | 4.4 | |
| JMP | n/a | | 44 | 24 | 40 | 0.61 | | 0.54 | | 0.54 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|-------------|--------------------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62. -63 | | 1756-L64, -L65 | |
| JSR | n/a | no parameters | 60 | 56 | 60 | 6.44 | | 5.43 | | 5.44 | |
| JSR/RET | DINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 11.21 | + (x * 2.1) | 10.06 | + (x * 1.7) | 9.97 | + (x * 1.8) |
| JSR/RET | INT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 11.18 | + (x * 2.5) | 9.83 | + (x * 2.0) | 9.06 | + (x * 2.2) |
| JSR/RET | REAL | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 11.43 | + (x * 2.1) | 9.89 | + (x * 1.7) | 9.81 | + (x * 1.8) |
| JSR/RET | SINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 11.46 | + (x * 2.2) | 9.87 | + (x * 1.8) | 9.45 | + (x * 2.0) |
| JSR/SBR | DINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 11.94 | + (x * 2.1) | 10.20 | + (x * 1.7) | 9.94 | + (x * 1.8) |
| JSR/SBR | INT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 11.74 | + (x * 2.5) | 10.30 | + (x * 2.0) | 9.67 | + (x * 2.1) |
| JSR/SBR | REAL | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 11.69 | + (x * 2.1) | 10.31 | + (x * 1.7) | 9.35 | + (x * 2.0) |
| JSR/SBR | SINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 11.86 | + (x * 2.2) | 10.02 | + (x * 1.8) | 10.12 | + (x * 1.9) |
| LBL | n/a | | 16 | 12 | 16 | 0.10 | | 0.11 | | 0.13 | |
| LEQ | DINT | | 36 | 20 | 20 | 0.20 | | 0.18 | | 0.34 | |
| LEQ | REAL | | 52 | 36 | 36 | 0.35 | | 0.30 | | 0.43 | |
| LES | DINT | | 36 | 20 | 20 | 0.21 | | 0.18 | | 0.34 | |
| LES | REAL | | 52 | 36 | 36 | 0.38 | | 0.29 | | 0.44 | |
| LFL | DINT | | 80 | 64 | 64 | 3.67 | | 3.10 | | 3.24 | |
| LFL | INT | | 80 | 64 | 64 | 3.91 | | 3.28 | | 3.42 | |
| LFL | REAL | | 80 | 64 | 64 | 3.68 | | 3.11 | | 3.23 | |
| LFL | SINT | | 80 | 64 | 64 | 3.58 | | 3.00 | | 3.14 | |
| LFU | DINT | | 76 | 64 | 64 | 4.88 | | 4.11 | | 4.19 | |
| LFU | INT | | 76 | 64 | 64 | 4.65 | | 3.90 | | 3.98 | |
| LFU | REAL | | 76 | 64 | 64 | 4.88 | | 4.11 | | 4.19 | |
| LFU | SINT | | 76 | 64 | 64 | 4.25 | | 3.57 | | 3.64 | |
| LIM | DINT | | 76 | 52 | 52 | 0.46 | | 0.39 | | 0.62 | |
| LIM | REAL | | 68 | 44 | 44 | 1.53 | | 1.19 | | 1.42 | |
| LN | REAL | | 60 | 48 | 48 | 23.91 | | 19.92 | | 20.08 | |
| LOG | REAL | | 60 | 48 | 48 | 23.80 | | 19.94 | | 20.06 | |
| LOWER | n/a | x = number of Source characters | 88 | 80 | 80 | 1.92 | + (x * 0.2) | 1.71 | + (x * 0.2) | 1.72 | + (x * 0.2) |
| MAAT | n/a | | 56 | | 56 | | | 79.00 | | 80.00 | |
| MAFR | n/a | | 56 | | 56 | | | 103.00 | | 105.00 | |
| MAG | n/a | | 172 | | 172 | | | 320.00 | | 336.00 | |
| MAH | n/a | switch/marker | 56 | | 56 | | | 69.00 | | 70.00 | |
| MAHD | n/a | | 72 | | 72 | | | 68.00 | | 70.00 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | |
|--------------------|-----------|---------------------------------------|----------------|-----------|------------|-----------------------------------|--------------------|----------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | 1756-L61, -62, -63 | 1756-L64, -L65 |
| MAJ | n/a | | 116 | | 148 | | 95.00 | 104.00 |
| MAJ | n/a | w/ merge | 188 | | 148 | | 111.00 | 115.00 |
| MAM | n/a | | 124 | | 156 | | 113.00 | 112.00 |
| MAM | n/a | w/ merge | 204 | | 156 | | 126.00 | 132.00 |
| MAOC | n/a | | 476 | | 476 | | 295.00 | 305.00 |
| MAPC | n/a | | 168 | | 164 | | 306.00 | 319.00 |
| MAR | n/a | | 96 | | 96 | | 129.00 | 130.00 |
| MAS | n/a | all w/ move and jog running | 84 | | 104 | | 114.00 | 117.00 |
| MAS | n/a | individual motion types | 120 | | 104 | | 73.00 | 74.00 |
| MASD | n/a | | 56 | | 56 | | 105.00 | 112.00 |
| MASR | n/a | | 56 | | 56 | | 47.00 | 50.00 |
| MATC | n/a | | 124 | | 120 | | 86.00 | 92.00 |
| MAW | n/a | | 72 | | 72 | | 108.00 | 115.00 |
| MCCD | n/a | | 44 | | 40 | | 70.00 | 70.00 |
| MCCM | n/a | | 44 | | 40 | | 351.00 | 343.00 |
| MCCP | n/a | cubic | 180 | | 172 | | 10.00 | 10.00 |
| MCCP | n/a | linear | 180 | | 180 | | 13.00 | 13.00 |
| MCD | n/a | | 96 | | 96 | | 79.00 | 81.00 |
| MCLM | n/a | | 44 | | 40 | | 332.00 | 340.00 |
| MCR | n/a | | 4 | 4 | 4 | 0.03 | 0.03 | 0.03 |
| MCS | n/a | | 44 | | 40 | | 71.00 | 72.00 |
| MCSD | n/a | | 44 | | 40 | | 170.00 | 173.00 |
| MCSR | n/a | | 44 | | 40 | | 100.00 | 102.00 |
| MCSV | n/a | | 44 | | 40 | | | |
| MCT | n/a | | 44 | | 40 | | 434.00 | 438.00 |
| MCTP | n/a | | 44 | | 40 | | 202.00 | 272.00 |
| MDF | n/a | | 56 | | 56 | | 96.00 | 99.00 |
| MDO | n/a | | 72 | | 72 | | 130.00 | 133.00 |
| MDOC | n/a | | 120 | | 120 | | 42.00 | 47.00 |
| MDR | n/a | | 64 | | 64 | | 115.00 | 120.00 |
| MDW | n/a | | 56 | | 56 | | 108.00 | 112.00 |
| MEQ | DINT | | 32 | 32 | 32 | 0.33 | 0.29 | 0.52 |
| MGPS | n/a | hard shutdown w/ move and jog running | 60 | | 60 | | 83.00 | 84.00 |
| MGPS | n/a | fast shutdown w/ move and jog running | 60 | | 60 | | 83.00 | 86.00 |
| MGPS | n/a | fast stop w/ move and jog | 60 | | 60 | | 80.00 | 81.00 |
| MGS | n/a | w/ move and jog running | 60 | | 60 | | 80.00 | 81.00 |
| MGSD | n/a | | 52 | | 52 | | 102.00 | 105.00 |
| MGSP | n/a | | 52 | | 52 | | 51.00 | 54.00 |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | | | | |
|--------------------|-----------|--------------------------------------|----------------|-----------|------------|-----------------------------------|-------------|--------------------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62, -63 | | 1756-L64, -L65 | |
| MGSR | n/a | | 52 | | 52 | | | 69.00 | | 72.00 | |
| MID | n/a | x = number of Destination characters | 108 | 100 | 100 | 2.69 | + (x * 0.2) | 2.47 | + (x * 0.2) | 2.47 | + (x * 0.2) |
| MOD | DINT | | 64 | 44 | 44 | 9.53 | | 7.91 | | 8.10 | |
| MOD | REAL | | 64 | 44 | 44 | 12.17 | | 10.10 | | 10.29 | |
| MOV | DINT-DINT | | 36 | 24 | 24 | 0.25 | | 0.21 | | 0.32 | |
| MOV | REAL-REAL | | 60 | 48 | 48 | 0.46 | | 0.38 | | 0.49 | |
| MRAT | n/a | | 56 | | 56 | | | 55.00 | | 55.00 | |
| MRHD | n/a | | 64 | | 64 | | | 55.00 | | 58.00 | |
| MRP | n/a | | 72 | | 72 | | | 44.00 | | 47.00 | |
| MSF | n/a | | 56 | | 56 | | | 117.00 | | 119.00 | |
| MSG | n/a | | 36 | 36 | 36 | 4.63 | | 3.80 | | 3.80 | |
| MSO | n/a | | 56 | | 56 | | | 38.00 | | 41.00 | |
| MUL | DINT | | 64 | 44 | 44 | 5.37 | | 4.49 | | 4.68 | |
| MUL | REAL | | 64 | 44 | 44 | 1.86 | | 1.55 | | 1.74 | |
| MVM | n/a | | 64 | 44 | 44 | 3.00 | | 2.53 | | 2.71 | |
| NEG | DINT | | 40 | 28 | 28 | 0.30 | | 0.25 | | 0.36 | |
| NEG | REAL | | 68 | 56 | 56 | 0.50 | | 0.44 | | 0.54 | |
| NEQ | DINT | | 36 | 20 | 20 | 0.21 | | 0.18 | | 0.33 | |
| NEQ | REAL | | 36 | 20 | 20 | 0.29 | | 0.19 | | 0.32 | |
| NOP | n/a | | 4 | 4 | 4 | 0.03 | | 0.02 | | 0.03 | |
| NOT | DINT | | 40 | 28 | 28 | 0.43 | | 0.28 | | 0.39 | |
| ONS | BOOL | | 40 | 36 | 36 | 1.44 | | 1.21 | | 1.24 | |
| OR | DINT | | 48 | 28 | 28 | 0.21 | | 0.25 | | 0.42 | |
| OSF | BOOL | | 52 | 44 | 44 | 1.25 | | 1.06 | | 1.12 | |
| OSR | BOOL | | 52 | 44 | 44 | 1.35 | | 1.14 | | 1.19 | |
| OTE | BOOL | | 12 | 4 | 4 | 0.09 | | 0.08 | | 0.15 | |
| OTL | BOOL | | 12 | 4 | 4 | 0.09 | | 0.08 | | 0.15 | |
| OTU | BOOL | | 12 | 4 | 4 | 0.09 | | 0.08 | | 0.16 | |
| PATT | n/a | | 56 | 52 | 48 | 21.12 | | 25.30 | | 23.00 | |
| PCLF | n/a | | 44 | 44 | 40 | 7.26 | | 6.80 | | 6.80 | |
| PCMD | n/a | | 64 | 60 | 56 | 41.24 | | 34.40 | | 35.90 | |
| PDET | n/a | | 44 | 44 | 40 | 3.68 | | 22.30 | | 23.30 | |
| PFL | n/a | | 48 | 44 | 40 | 1.52 | | 1.40 | | 1.40 | |
| PID | DINT | independent - slave mode | 252 | 228 | 228 | 81.00 | | 61.3 | | 62.0 | |
| PID | DINT | independent | 252 | 228 | 228 | 79.80 | | 61.0 | | 62.4 | |
| PID | DINT | ISA - dependent | 252 | 228 | 228 | 86.80 | | 66.9 | | 66.8 | |
| PID | DINT | manual mode | 252 | 228 | 228 | 76.00 | | 57.8 | | 61.4 | |
| PID | DINT | set output mode | 252 | 228 | 228 | 76.10 | | 59.0 | | 58.6 | |
| PID | REAL | independent - slave mode | 120 | 92 | 92 | 81.80 | | 63.3 | | 63.0 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|--------------|--------------------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62, -63 | | 1756-L64, -L65 | |
| PID | REAL | independent | 120 | 92 | 92 | 78.00 | | 60.8 | | 59.8 | |
| PID | REAL | ISA - dependent | 120 | 92 | 92 | 83.10 | | 64.2 | | 64.7 | |
| PID | REAL | manual mode | 120 | 92 | 92 | 73.00 | | 56.7 | | 56.6 | |
| PID | REAL | set output mode | 120 | 92 | 92 | 72.00 | | 55.7 | | 57.3 | |
| POVR | n/a | | 64 | 44 | 56 | 2.80 | | 24.60 | | 25.60 | |
| PPD | n/a | | 32 | 36 | 32 | 3.38 | | 3.10 | | 3.10 | |
| PRNP | n/a | | 32 | 36 | 32 | 2.82 | | 2.50 | | 2.50 | |
| PSC | n/a | | 32 | 36 | 32 | 1.92 | | 1.80 | | 1.80 | |
| PXRQ | n/a | | 76 | 68 | 68 | 2.52 | | 2.30 | | 2.40 | |
| RAD | REAL | | 64 | 52 | 52 | 1.89 | | 1.58 | | 1.69 | |
| RES | T,C or R | | 12 | 8 | 8 | 0.15 | | 0.13 | | 0.18 | |
| RET | n/a | in FOR loop | 40 | 40 | 40 | 2.58 | | 2.16 | | 2.13 | |
| RET | n/a | no parameters | 40 | 40 | 40 | 2.29 | | 1.90 | | 1.90 | |
| RTO | TIMER | | 12 | 8 | 8 | 0.21 | | 0.18 | | 0.23 | |
| RTOS | n/a | example 1 Source = 1.234 | 76 | | 64 | 86.9 | | 67.6 | | 66.9 | |
| RTOS | n/a | example 2 Source = 1234.5677 | 76 | 64 | 64 | 92.6 | | 70.6 | | 70.6 | |
| SBR | n/a | no parameters | 40 | 40 | 40 | 2.71 | | 2.25 | | 2.25 | |
| SFP | n/a | pause | 64 | 60 | 64 | 7.0 | | 11.3 | | 12.0 | |
| SFP | n/a | execute | 64 | 60 | 64 | 5.8 | | 6.0 | | 6.2 | |
| SFR | n/a | | 72 | 64 | 68 | 12.2 | | 16.2 | | 16.9 | |
| SIN | REAL | | 60 | 48 | 48 | 30.89 | | 25.72 | | 25.84 | |
| SIZE | DINT | | 124 | 116 | 116 | 1.92 | | 1.62 | | 1.71 | |
| SQI | DINT | | 72 | 48 | 48 | 1.50 | | 1.27 | | 1.48 | |
| SQL | DINT | | 64 | 48 | 48 | 2.29 | | 1.94 | | 2.07 | |
| SQO | DINT | | 64 | 44 | 44 | 2.37 | | 2.00 | | 2.15 | |
| SQR | DINT | | 52 | 40 | 40 | 3.18 | | 2.68 | | 2.79 | |
| SQR | REAL | | 52 | 40 | 40 | 11.25 | | 9.51 | | 9.62 | |
| SRT | DINT | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | 13.95 | | 11.29 | | 11.59 | |
| SRT | REAL | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | 15.12 | | 11.08 | | 10.94 | |
| SSV | n/a | | 84.0 | 76.0 | 76 | See GSV SSV Attributes. | | | | | |
| STD | DINT | x = Length | 116 | 104 | 104 | 38.98 | + (x * 11.0) | 31.73 | + (x * 9.0) | 32.71 | + (x * 9.1) |
| STD | INT | x = Length | 116 | 104 | 104 | 39.34 | + (x * 11.3) | 32.81 | + (x * 9.3) | 32.47 | + (x * 9.4) |
| STD | REAL | x = Length | 116 | 104 | 104 | 37.28 | + (x * 11.0) | 31.58 | + (x * 9.0) | 30.44 | + (x * 9.0) |
| STD | SINT | x = Length | 116 | 104 | 104 | 39.36 | + (x * 11.1) | 31.10 | + (x * 9.1) | 31.93 | + (x * 9.2) |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------|-------------|--------------------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1769-L23E | | 1756-L61, -62, -63 | | 1756-L64, -L65 | |
| STOD | n/a | example 1 Source = 1234 | 80 | 72 | 72 | 57.70 | | 36.69 | | 37.86 | |
| STOD | n/a | example 2 Source = ABCDEFGH1234ABCDEFGH | 80 | | 72 | 62.00 | | 41.55 | | 41.94 | |
| STOR | n/a | example 1 Source = 1.234 | 80 | 72 | 72 | 65.78 | | 44.68 | | 43.17 | |
| STOR | n/a | example 2 Source = ABCDEFGH1.234ABCDEFGH | 80 | | 72 | 69.50 | | 47.62 | | 46.68 | |
| SUB | DINT | | 48 | 28 | 28 | 0.30 | | 0.26 | | 0.44 | |
| SUB | REAL | | 64 | 44 | 44 | 1.86 | | 1.56 | | 1.74 | |
| SWPB | DINT | High/Low | 72 | 64 | 64 | 1.68 | | 1.31 | | 1.36 | |
| SWPB | DINT | Reverse | 72 | 64 | 64 | 1.49 | | 1.40 | | 1.44 | |
| SWPB | DINT | Word | 72 | 64 | 64 | 1.46 | | 1.38 | | 1.29 | |
| TAN | REAL | | 60 | 48 | 48 | 35.30 | | 29.36 | | 29.85 | |
| TND | n/a | | 12 | 12 | 12 | 0.01 | | 0.01 | | 0.01 | |
| TOD | n/a | | 52 | 40 | 40 | 4.87 | | 4.09 | | 4.19 | |
| TOF | TIMER | | 12 | 8 | 8 | 0.15 | | 0.13 | | 0.18 | |
| TON | TIMER | | 12 | 8 | 8 | 0.21 | | 0.18 | | 0.23 | |
| TRN | DINT | | 52 | 40 | 40 | 4.49 | | 3.75 | | 3.86 | |
| TRN | REAL | | 104 | 92 | 92 | 7.49 | | 6.26 | | 6.37 | |
| UID | n/a | | 28 | 28 | 28 | 13.10 | | 13.96 | | 13.57 | |
| UIE | n/a | | 28 | 28 | 28 | 16.09 | | 13.39 | | 13.57 | |
| UPPER | n/a | x = number of Source characters | 88 | 80.00 | 80 | 1.89 | + (x * 0.2) | 1.82 | + (x * 0.2) | 1.96 | + (x * 0.2) |
| XIC | BOOL | | 12 | 4 | 4 | 0.06 | | 0.05 | | 0.13 | |
| XIO | BOOL | | 12 | 4 | 4 | 0.06 | | 0.06 | | 0.13 | |
| XOR | DINT | | 48 | 28 | 28 | 0.25 | | 0.25 | | 0.41 | |
| XPY | REAL | Actual time depends on the values of the operands. | 72 | 52 | 52 | 108.79 | | 89.87 | | 93.07 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------|-------------------|----------|-------------------|-------|-------------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | 1769-L32, -L35 | | |
| ABL | n/a | | 48 | 44 | 44 | 11.23 | | 11.01 | | 11.01 | |
| ABS | DINT | | 44 | 32 | 32 | 0.28 | | 0.32 | | 0.32 | |
| ABS | REAL | | 68 | 56 | 56 | 0.41 | | 0.47 | | 0.47 | |
| ACB | n/a | | 48 | 44 | 52 | 9.81 | | 11.42 | | 11.42 | |
| ACL | n/a | | 56 | 56 | 64 | 56.12 | | 66.20 | | 66.20 | |
| ACS | REAL | | 60 | 48 | 48 | 31.62 | | 35.55 | | 35.55 | |
| ADD | DINT | | 48 | 28 | 28 | 0.26 | | 0.29 | | 0.29 | |
| ADD | REAL | | 64 | 44 | 44 | 1.53 | | 1.70 | | 1.70 | |
| AFI | n/a | | 4 | 4 | 4 | 0.03 | | 0.03 | | 0.03 | |
| AHL | n/a | | 64 | 60 | 68 | 7.97 | | 9.23 | | 9.23 | |
| ALMA | n/a | .In is true, Alarm state doesn't change (input value doesn't change alarm level) | 284 | | 264 | 22.5 | | n/a | | 17.6 | |
| ALMA | n/a | HAlarm triggered | 284 | | 264 | 107.9 | | n/a | | 106.7 | |
| ALMA | n/a | HHAlarm triggered | 284 | | 264 | 123.1 | | n/a | | 124.5 | |
| ALMA | n/a | .In = FALSE | 284 | | 264 | 18.5 | | n/a | | 17.5 | |
| ALMD | n/a | Alarm state doesn't change (T>T or F>F) | 320 | | 304 | 8.30 | | n/a | | 8.60 | |
| ALMD | n/a | Alarm state changes (T>F or F>T) | 320 | | 304 | 32.50 | | n/a | | 37.80 | |
| AND | DINT | | 48 | 28 | 28 | 0.23 | | 0.24 | | 0.24 | |
| ARD | n/a | | 72 | 64 | 76 | 12.17 | | 13.20 | | 13.20 | |
| ARL | n/a | | 72 | 64 | 76 | 6.95 | | 10.03 | | 10.03 | |
| ASN | REAL | | 60 | 48 | 48 | 30.30 | | 33.99 | | 33.99 | |
| ATN | REAL | | 60 | 48 | 48 | 21.48 | | 24.11 | | 24.11 | |
| AVE | DINT | x = Length | 176 | 164 | 116 | 14.14 | + (x * 2.4) | 15.80 | + (x * 2.8) | 15.80 | + (x * 2.8) |
| AVE | INT | x = Length | 128 | 116 | 116 | 14.35 | + (x * 2.6) | 16.13 | + (x * 2.9) | 16.13 | + (x * 2.9) |
| AVE | REAL | x = Length | 128 | 116 | 116 | 12.42 | + (x * 3.3) | 13.77 | + (x * 3.8) | 13.77 | + (x * 3.8) |
| AVE | SINT | x = Length | 128 | 116 | 116 | 14.38 | + (x * 2.5) | 16.11 | + (x * 2.4) | 16.11 | + (x * 2.4) |
| AWA | n/a | | 76 | 68 | 68 | 38.41 | | 45.38 | | 45.38 | |
| AWT | n/a | | 76 | 68 | 68 | 37.21 | | 42.29 | | 42.29 | |
| BRK | n/a | | 44 | | 44 | n/a | | n/a | | n/a | |
| BSL | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | 2.37 | + ((x /32) * 0.2) | 2.61 | + ((x /32) * 0.2) | 2.61 | + ((x /32) * 0.2) |
| BSR | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | 2.57 | + ((x /32) * 0.2) | 2.84 | + ((x /32) * 0.2) | 2.84 | + ((x /32) * 0.2) |
| BTD | DINT | | 64 | 52 | 52 | 2.82 | | 3.13 | | 3.13 | |
| CLR | DINT | | 24 | 20 | 20 | 0.15 | | 0.17 | | 0.17 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|--------------|----------|--------------|----------------|--------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| CLR | REAL | | 24 | 20 | 20 | 0.19 | | 0.20 | | 0.20 | |
| CMP | n/a | e = time for the operators in the expression | 92 | 76 | 76 | 1.45 | + e | 1.61 | + e | 1.61 | + e |
| CONCAT | n/a | x = number of characters in Source A + number of characters in Source | 120 | 108 | 116 | 2.31 | + (x * 0.2) | 2.59 | + (x * 0.2) | 2.59 | + (x * 0.2) |
| COP | DINT | | 72 | 64 | 64 | 3.02 | + (x * 0.2) | 3.36 | + (x * 0.2) | 3.36 | + (x * 0.2) |
| COP | INT | | 72 | 64 | 64 | 2.80 | + (x * 0.1) | 3.13 | + (x * 0.1) | 3.13 | + (x * 0.1) |
| COP | REAL | | 72 | 64 | 64 | 3.01 | + (x * 0.2) | 3.35 | + (x * 0.2) | 3.35 | + (x * 0.2) |
| COP | SINT | | 72 | 64 | 64 | 2.90 | + (x * 0.04) | 3.22 | + (x * 0.04) | 3.22 | + (x * 0.04) |
| COS | REAL | | 152 | 140 | 48 | 25.67 | | 28.90 | | 28.90 | |
| CPS | DINT | x = Length | 72 | | 64 | 4.7 | + (x * 0.2) | 5.0 | + (x * 0.2) | 5.1 | + (x * 0.2) |
| CPS | INT | x = Length | 72 | | 64 | 4.5 | + (x * 0.1) | 4.9 | + (x * 0.1) | 4.9 | + (x * 0.1) |
| CPS | REAL | x = Length | 72 | | 64 | 4.7 | + (x * 0.2) | 5.1 | + (x * 0.2) | 5.1 | + (x * 0.2) |
| CPS | SINT | | 72 | 64 | 64 | 4.50 | + (x * 0.04) | 5.05 | + (x * 0.04) | 5.05 | + (x * 0.04) |
| CPT | n/a | e = time for the operators in the expression | 80 | 96 | | 1.66 | + e | 1.85 | + e | 1.85 | + e |
| CTD | Counter | | 12 | 8 | 8 | 0.18 | | 0.19 | | 0.19 | |
| CTU | Counter | | 12 | 8 | 8 | 0.18 | | 0.20 | | 0.20 | |
| DDT | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 4.05 | + (x * 0.4) | 4.55 | + (x * 0.4) | 4.55 | + (x * 0.4) |
| DDT | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 7.73 | + (x * 0.4) | 9.04 | + (x * 0.4) | 9.04 | + (x * 0.4) |
| DDT | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 11.44 | + (x * 0.4) | 12.59 | + (x * 0.4) | 12.59 | + (x * 0.4) |
| DEG | REAL | | 64 | 52 | 52 | 1.59 | | 1.75 | | 1.75 | |
| DELETE | n/a | x = number of Destination characters | 108 | 100 | 100 | 2.18 | + (x * 0.2) | 2.36 | + (x * 0.2) | 2.36 | + (x * 0.2) |
| Digital | Static | | | | | 8.30 | | | | 8.60 | |
| Digital | Dynamic | | | | | 32.50 | | | | 37.80 | |
| DIV | DINT | | 64 | 44 | 44 | 5.14 | | 5.70 | | 5.70 | |
| DIV | REAL | | 64 | 44 | 44 | 1.94 | | 2.17 | | 2.17 | |
| DTOS | n/a | x = number of Destination characters | 76 | 64 | 64 | 7.07 | + (x * 0.1) | 8.23 | + (x * 0.1) | 8.23 | + (x * 0.1) |
| DTR | DINT | | 60 | 40 | 40 | 1.01 | | 1.11 | | 1.11 | |
| EOT | | | 56 | 52 | 52 | 2.6 | | 4.0 | | 4.0 | |
| EQU | DINT | | 36 | 20 | 20 | 0.18 | | 0.20 | | 0.20 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|--------------------------------|-------------------|----------|-------------------|----------------|-------------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| EQU | REAL | | 36 | 20 | 20 | 0.15 | | 0.21 | | 0.21 | |
| EVENT | | | 44 | NA | 44 | 16.4 | | 16.7 | | 16.7 | |
| FAL | n/a | | 132 | 116 | 108 | 4.67 | + (x * 1.8) | 5.81 | + (x * 2.0) | 5.81 | + (x * 2.0) |
| FAL | REAL | | | | | | | | | | |
| FBC | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 4.72 | + (x * 0.3) | 4.62 | + (x * 0.4) | 4.62 | + (x * 0.4) |
| FBC | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 7.40 | + (x * 0.4) | 8.64 | + (x * 0.4) | 8.64 | + (x * 0.4) |
| FBC | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | 10.46 | + (x * 0.4) | 11.86 | + (x * 0.4) | 11.86 | + (x * 0.4) |
| FFL | DINT | | 80 | 60 | 64 | 3.10 | | 3.45 | | 3.45 | |
| FFL | INT | | 80 | 64 | 64 | 3.28 | | 3.65 | | 3.65 | |
| FFL | REAL | | 80 | 64 | 64 | 3.11 | | 3.45 | | 3.45 | |
| FFL | SINT | | 80 | 64 | 64 | 3.00 | | 3.34 | | 3.34 | |
| FFU | DINT | x = Length | 76 | 64 | 64 | 3.67 | + (x * 0.2) | 4.10 | + (x * 0.2) | 4.10 | + (x * 0.2) |
| FFU | INT | x = Length | 76 | 64 | 64 | 3.57 | + (x * 0.3) | 3.99 | + (x * 0.3) | 3.99 | + (x * 0.3) |
| FFU | REAL | x = Length | 76 | 64 | 64 | 3.68 | + (x * 0.2) | 4.08 | + (x * 0.2) | 4.08 | + (x * 0.2) |
| FFU | SINT | x = Length | 76 | 64 | 64 | 3.34 | + (x * 0.2) | 3.72 | + (x * 0.2) | 3.72 | + (x * 0.2) |
| FIND | n/a | | 112 | 100 | 100 | 1.84 | | 1.96 | | 1.96 | |
| FLL | DINT | x = Length | 72 | 60 | 60 | 2.24 | + (x * 0.1) | 2.49 | + (x * 0.1) | 2.49 | + (x * 0.1) |
| FLL | INT | x = Length | 72 | 60 | 60 | 1.96 | + (x * 0.1) | 2.18 | + (x * 0.1) | 2.18 | + (x * 0.1) |
| FLL | REAL | x = Length | 72 | 60 | 60 | 2.25 | + (x * 0.1) | 2.52 | + (x * 0.1) | 2.52 | + (x * 0.1) |
| FLL | SINT | x = Length | 72 | 60 | 60 | 1.85 | + (x * 0.1) | 2.08 | + (x * 0.1) | 2.08 | + (x * 0.1) |
| FOR | DINT | x = Terminal value/Step size | 72 | 64.00 | 68 | 5.31 | + (x * 2.3) | 5.86 | + (x * 2.6) | 5.86 | + (x * 2.6) |
| FRD | n/a | | 52 | 40 | 40 | 3.07 | | 3.42 | | 3.42 | |
| FSC | n/a | x = length of file, e = execution time for compare expression | 152 | 140 | 140 | 4.93 | + (x * (1.9 + e)) | 5.81 | + (x * (2.1 + e)) | 5.81 | + (x * (2.1 + e)) |
| GEQ | DINT | | 36 | 20 | 20 | 0.18 | | 0.19 | | 0.19 | |
| GEQ | REAL | | 52 | 36 | 36 | 0.26 | | 0.34 | | 0.34 | |
| GRT | DINT | | 36 | 20 | 20 | 0.18 | | 0.19 | | 0.19 | |
| GRT | REAL | | 52 | 36 | 36 | 0.27 | | 0.32 | | 0.32 | |
| GSV | n/a | | 84.0 | 76 | 76 | <u>See GSV SSV Attributes.</u> | | | | | |
| INSERT | n/a | x = number of Destination characters | 128 | 116 | 116 | 3.06 | + (x * 0.2) | 3.27 | + (x * 0.2) | 3.27 | + (x * 0.2) |
| IOT | n/a | | 60 | NA | 60 | 8.0 | | 3.3 | | 3.3 | |
| JMP | n/a | | 44 | 24 | 40 | 0.51 | | 0.58 | | 0.58 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|-------------|----------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| JSR | n/a | no parameters | 60 | 56 | 60 | 5.40 | | 6.04 | | 6.04 | |
| JSR/RET | DINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 10.17 | + (x * 1.7) | 10.76 | + (x * 2.0) | 10.76 | + (x * 2.0) |
| JSR/RET | INT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 8.97 | + (x * 2.1) | 10.57 | + (x * 2.3) | 10.57 | + (x * 2.3) |
| JSR/RET | REAL | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 9.74 | + (x * 1.8) | 10.82 | + (x * 2.0) | 10.82 | + (x * 2.0) |
| JSR/RET | SINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | 10.14 | + (x * 1.8) | 10.14 | + (x * 2.1) | 10.14 | + (x * 2.1) |
| JSR/SBR | DINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 11.23 | + (x * 1.7) | 11.32 | + (x * 2.0) | 11.32 | + (x * 2.0) |
| JSR/SBR | INT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 9.83 | + (x * 2.0) | 10.99 | + (x * 2.3) | 10.99 | + (x * 2.3) |
| JSR/SBR | REAL | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 9.70 | + (x * 1.8) | 11.15 | + (x * 2.0) | 11.15 | + (x * 2.0) |
| JSR/SBR | SINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | 10.22 | + (x * 1.8) | 11.09 | + (x * 2.1) | 11.09 | + (x * 2.1) |
| LBL | n/a | | 16 | 12 | 16 | 0.08 | | 0.09 | | 0.09 | |
| LEQ | DINT | | 36 | 20 | 20 | 0.18 | | 0.20 | | 0.20 | |
| LEQ | REAL | | 52 | 36 | 36 | 0.29 | | 0.32 | | 0.32 | |
| LES | DINT | | 36 | 20 | 20 | 0.18 | | 0.20 | | 0.20 | |
| LES | REAL | | 52 | 36 | 36 | 0.27 | | 0.34 | | 0.34 | |
| LFL | DINT | | 80 | 64 | 64 | 3.10 | | 3.44 | | 3.44 | |
| LFL | INT | | 80 | 64 | 64 | 3.28 | | 3.63 | | 3.63 | |
| LFL | REAL | | 80 | 64 | 64 | 3.10 | | 3.45 | | 3.45 | |
| LFL | SINT | | 80 | 64 | 64 | 3.00 | | 3.32 | | 3.32 | |
| LFU | DINT | | 76 | 64 | 64 | 4.13 | | 4.56 | | 4.56 | |
| LFU | INT | | 76 | 64 | 64 | 3.94 | | 4.35 | | 4.35 | |
| LFU | REAL | | 76 | 64 | 64 | 4.12 | | 4.56 | | 4.56 | |
| LFU | SINT | | 76 | 64 | 64 | 3.95 | | 3.96 | | 3.96 | |
| LIM | DINT | | 76 | 52 | 52 | 0.39 | | 0.43 | | 0.43 | |
| LIM | REAL | | 68 | 44 | 44 | 1.17 | | 1.36 | | 1.36 | |
| LN | REAL | | 60 | 48 | 48 | 19.99 | | 22.33 | | 22.33 | |
| LOG | REAL | | 60 | 48 | 48 | 19.95 | | 22.31 | | 22.31 | |
| LOWER | n/a | x = number of Source characters | 88 | 80 | 80 | 1.62 | + (x * 0.2) | 1.98 | + (x * 0.2) | 1.98 | + (x * 0.2) |
| MAAT | n/a | | 56 | | 56 | 75.00 | | | | | |
| MAFR | n/a | | 56 | | 56 | 113.00 | | | | | |
| MAG | n/a | | 172 | | 172 | 198.00 | | | | | |
| MAH | n/a | switch/marker | 56 | | 56 | 67.00 | | | | | |
| MAHD | n/a | | 72 | | 72 | 53.00 | | | | | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | | | | |
|--------------------|-----------|---------------------------------------|----------------|-----------|------------|-----------------------------------|--|----------|--|----------------|--|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| MAJ | n/a | | 116 | | 148 | 85.00 | | | | | |
| MAJ | n/a | w/ merge | 188 | | 148 | 109.00 | | | | | |
| MAM | n/a | | 124 | | 156 | 105.00 | | | | | |
| MAM | n/a | w/ merge | 204 | | 156 | 119.00 | | | | | |
| MAOC | n/a | | 476 | | 476 | 176.00 | | | | | |
| MAPC | n/a | | 168 | | 164 | 190.00 | | | | | |
| MAR | n/a | | 96 | | 96 | 138.00 | | | | | |
| MAS | n/a | all w/ move and jog running | 84 | | 104 | 99.00 | | | | | |
| MAS | n/a | individual motion types | 120 | | 104 | 69.00 | | | | | |
| MASD | n/a | | 56 | | 56 | 110.00 | | | | | |
| MASR | n/a | | 56 | | 56 | 44.00 | | | | | |
| MATC | n/a | | 124 | | 120 | 82.00 | | | | | |
| MAW | n/a | | 72 | | 72 | 122.00 | | | | | |
| MCCD | n/a | | 44 | | 40 | 69.00 | | | | | |
| MCCM | n/a | | 44 | | 40 | 207.00 | | | | | |
| MCCP | n/a | cubic | 180 | | 172 | 10.00 | | | | | |
| MCCP | n/a | linear | 180 | | 180 | 13.00 | | | | | |
| MCD | n/a | | 96 | | 96 | 75.00 | | | | | |
| MCLM | n/a | | 44 | | 40 | 224.00 | | | | | |
| MCR | n/a | | 4 | 4 | 4 | 0.03 | | 0.03 | | 0.03 | |
| MCS | n/a | | 44 | | 40 | 68.00 | | | | | |
| MCSD | n/a | | 44 | | 40 | 166.00 | | | | | |
| MCSR | n/a | | 44 | | 40 | 91.00 | | | | | |
| MCSV | n/a | | 44 | | 40 | | | | | | |
| MCT | n/a | | 44 | | 40 | n/a | | | | | |
| MCTP | n/a | | 44 | | 40 | n/a | | | | | |
| MDF | n/a | | 56 | | 56 | n/a | | | | | |
| MDO | n/a | | 72 | | 72 | n/a | | | | | |
| MDOC | n/a | | 120 | | 120 | 45.00 | | | | | |
| MDR | n/a | | 64 | | 64 | 119.00 | | | | | |
| MDW | n/a | | 56 | | 56 | 117.00 | | | | | |
| MEQ | DINT | | 32 | 32 | 32 | 0.29 | | 0.32 | | 0.32 | |
| MGPS | n/a | hard shutdown w/ move and jog running | 60 | | 60 | 52.00 | | | | | |
| MGPS | n/a | fast shutdown w/ move and jog running | 60 | | 60 | 57.00 | | | | | |
| MGPS | n/a | fast stop w/ move and jog | 60 | | 60 | 54.00 | | | | | |
| MGS | n/a | w/ move and jog running | 60 | | 60 | 54.00 | | | | | |
| MGSD | n/a | | 52 | | 52 | 50.00 | | | | | |
| MGSP | n/a | | 52 | | 52 | 41.00 | | | | | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|--------------------------------------|----------------|-----------|------------|-----------------------------|-------------|----------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| MGSR | n/a | | 52 | | 52 | 53.00 | | | | | |
| MID | n/a | x = number of Destination characters | 108 | 100 | 100 | 2.23 | + (x * 0.2) | 2.19 | + (x * 0.2) | 2.19 | + (x * 0.2) |
| MOD | DINT | | 64 | 44 | 44 | 8.35 | | 8.91 | | 8.91 | |
| MOD | REAL | | 64 | 44 | 44 | 10.09 | | 11.36 | | 11.36 | |
| MOV | DINT-DINT | | 36 | 24 | 24 | 0.20 | | 0.23 | | 0.23 | |
| MOV | REAL-REAL | | 60 | 48 | 48 | 0.39 | | 0.42 | | 0.42 | |
| MRAT | n/a | | 56 | | 56 | 50.00 | | | | | |
| MRHD | n/a | | 64 | | 64 | 38.00 | | | | | |
| MRP | n/a | | 72 | | 72 | 45.00 | | | | | |
| MSF | n/a | | 56 | | 56 | 122.00 | | | | | |
| MSG | n/a | | 36 | 36 | 36 | 3.80 | | 4.31 | | 4.31 | |
| MSO | n/a | | 56 | | 56 | 38.00 | | | | | |
| MUL | DINT | | 64 | 44 | 44 | 4.49 | | 5.04 | | 5.04 | |
| MUL | REAL | | 64 | 44 | 44 | 1.56 | | 1.73 | | 1.73 | |
| MVM | n/a | | 64 | 44 | 44 | 2.53 | | 2.81 | | 2.81 | |
| NEG | DINT | | 40 | 28 | 28 | 0.25 | | 0.28 | | 0.28 | |
| NEG | REAL | | 68 | 56 | 56 | 0.44 | | 0.49 | | 0.49 | |
| NEQ | DINT | | 36 | 20 | 20 | 0.18 | | 0.20 | | 0.20 | |
| NEQ | REAL | | 36 | 20 | 20 | 0.16 | | 0.21 | | 0.21 | |
| NOP | n/a | | 4 | 4 | 4 | 0.03 | | 0.04 | | 0.04 | |
| NOT | DINT | | 40 | 28 | 28 | 0.18 | | 0.22 | | 0.22 | |
| ONS | BOOL | | 40 | 36 | 36 | 1.21 | | 1.35 | | 1.35 | |
| OR | DINT | | 48 | 28 | 28 | 0.22 | | 0.30 | | 0.30 | |
| OSF | BOOL | | 52 | 44 | 44 | 1.06 | | 1.17 | | 1.17 | |
| OSR | BOOL | | 52 | 44 | 44 | 1.13 | | 1.26 | | 1.26 | |
| OTE | BOOL | | 12 | 4 | 4 | 0.08 | | 0.08 | | 0.08 | |
| OTL | BOOL | | 12 | 4 | 4 | 0.08 | | 0.09 | | 0.09 | |
| OTU | BOOL | | 12 | 4 | 4 | 0.08 | | 0.09 | | 0.09 | |
| PATT | n/a | | 56 | 52 | 48 | 32.30 | | 27.80 | | 27.80 | |
| PCLF | n/a | | 44 | 44 | 40 | 6.70 | | 7.08 | | 7.00 | |
| PCMD | n/a | | 64 | 60 | 56 | 32.00 | | 34.40 | | 34.40 | |
| PDET | n/a | | 44 | 44 | 40 | 22.40 | | 21.40 | | 21.40 | |
| PFL | n/a | | 48 | 44 | 40 | 1.40 | | 1.48 | | 1.50 | |
| PID | DINT | independent - slave mode | 252 | 228 | 228 | 61.8 | | 64.8 | | 64.8 | |
| PID | DINT | independent | 252 | 228 | 228 | 61.9 | | 64.8 | | 64.8 | |
| PID | DINT | ISA - dependent | 252 | 228 | 228 | 66.0 | | 70.7 | | 70.7 | |
| PID | DINT | manual mode | 252 | 228 | 228 | 59.0 | | 61.2 | | 61.2 | |
| PID | DINT | set output mode | 252 | 228 | 228 | 57.6 | | 62.8 | | 62.8 | |
| PID | REAL | independent - slave mode | 120 | 92 | 92 | 62.3 | | 64.9 | | 64.9 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|-------------|----------|--------------|----------------|--------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| PID | REAL | independent | 120 | 92 | 92 | 59.4 | | 61.9 | | 61.9 | |
| PID | REAL | ISA - dependent | 120 | 92 | 92 | 64.4 | | 67.8 | | 67.8 | |
| PID | REAL | manual mode | 120 | 92 | 92 | 55.7 | | 58.0 | | 58.0 | |
| PID | REAL | set output mode | 120 | 92 | 92 | 56.2 | | 58.8 | | 58.8 | |
| POVR | n/a | | 64 | 44 | 56 | 27.90 | | 2.73 | | 26.80 | |
| PPD | n/a | | 32 | 36 | 32 | 3.10 | | 3.26 | | 3.20 | |
| PRNP | n/a | | 32 | 36 | 32 | 2.60 | | 2.58 | | 2.70 | |
| PSC | n/a | | 32 | 36 | 32 | 1.80 | | 1.87 | | 1.80 | |
| PXRQ | n/a | | 76 | 68 | 68 | 2.40 | | 2.46 | | 2.50 | |
| RAD | REAL | | 64 | 52 | 52 | 1.58 | | 1.77 | | 1.77 | |
| RES | T,C or R | | 12 | 8 | 8 | 0.13 | | 0.15 | | 0.15 | |
| RET | n/a | in FOR loop | 40 | 40 | 40 | 2.12 | | 2.40 | | 2.40 | |
| RET | n/a | no parameters | 40 | 40 | 40 | 1.90 | | 2.13 | | 2.13 | |
| RTO | TIMER | | 12 | 8 | 8 | 0.18 | | 0.19 | | 0.19 | |
| RTOS | n/a | example 1 Source = 1.234 | 76 | | 64 | 75.6 | | 87.3 | | 81.4 | |
| RTOS | n/a | example 2 Source = 1234.5677 | 76 | 64 | 64 | 78.8 | | 91.6 | | 91.6 | |
| SBR | n/a | no parameters | 40 | 40 | 40 | 2.26 | | 2.54 | | 2.54 | |
| SFP | n/a | pause | 64 | 60 | 64 | 6.6 | | 6.8 | | 6.8 | |
| SFP | n/a | execute | 64 | 60 | 64 | 10.6 | | 6.2 | | 6.2 | |
| SFR | n/a | | 72 | 64 | 68 | 15.7 | | 16.0 | | 16.0 | |
| SIN | REAL | | 60 | 48 | 48 | 25.76 | | 29.02 | | 29.02 | |
| SIZE | DINT | | 124 | 116 | 116 | 1.62 | | 1.81 | | 1.81 | |
| SQI | DINT | | 72 | 48 | 48 | 1.26 | | 1.41 | | 1.41 | |
| SQL | DINT | | 64 | 48 | 48 | 1.94 | | 2.14 | | 2.14 | |
| SQO | DINT | | 64 | 44 | 44 | 1.99 | | 2.21 | | 2.21 | |
| SQR | DINT | | 52 | 40 | 40 | 2.70 | | 2.97 | | 2.97 | |
| SQR | REAL | | 52 | 40 | 40 | 9.52 | | 10.54 | | 10.54 | |
| SRT | DINT | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | 10.93 | | 13.11 | | 13.11 | |
| SRT | REAL | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | 11.06 | | 13.49 | | 13.49 | |
| SSV | n/a | | 84.0 | 76.0 | 76 | See GSV SSV Attributes. | | | | 32.73 | + (x * 9.0) |
| STD | DINT | x = Length | 116 | 104 | 104 | 31.72 | + (x * 9.2) | 36.25 | + (x * 10.5) | 36.25 | + (x * 10.5) |
| STD | INT | x = Length | 116 | 104 | 104 | 32.57 | + (x * 9.4) | 37.34 | + (x * 10.6) | 37.34 | + (x * 10.6) |
| STD | REAL | x = Length | 116 | 104 | 104 | 30.34 | + (x * 9.0) | 35.53 | + (x * 10.3) | 35.53 | + (x * 10.3) |
| STD | SINT | x = Length | 116 | 104 | 104 | 32.01 | + (x * 9.1) | 37.24 | + (x * 10.4) | 37.24 | + (x * 10.4) |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | | | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------|-------------|----------|-------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | 1768-L43 | | 1769-L31 | | 1769-L32, -L35 | |
| STOD | n/a | example 1 Source = 1234 | 80 | 72 | 72 | 42.57 | | 53.36 | | 53.36 | |
| STOD | n/a | example 2 Source = ABCDEFGH1234ABCDEFGH | 80 | | 72 | 48.27 | | 57.67 | | 57.67 | |
| STOR | n/a | example 1 Source = 1.234 | 80 | 72 | 72 | 45.83 | | 57.72 | | 57.72 | |
| STOR | n/a | example 2 Source = ABCDEFGH1.234ABCDEFGH | 80 | | 72 | 49.48 | | 61.63 | | 61.63 | |
| SUB | DINT | | 48 | 28 | 28 | 0.26 | | 0.29 | | 0.29 | |
| SUB | REAL | | 64 | 44 | 44 | 1.56 | | 1.74 | | 1.74 | |
| SWPB | DINT | High/Low | 72 | 64 | 64 | 1.34 | | 1.45 | | 1.45 | |
| SWPB | DINT | Reverse | 72 | 64 | 64 | 1.30 | | 1.56 | | 1.56 | |
| SWPB | DINT | Word | 72 | 64 | 64 | 1.25 | | 1.47 | | 1.47 | |
| TAN | REAL | | 60 | 48 | 48 | 29.42 | | 33.28 | | 33.28 | |
| TND | n/a | | 12 | 12 | 12 | 0.01 | | 0.01 | | 0.01 | |
| TOD | n/a | | 52 | 40 | 40 | 4.09 | | 4.56 | | 4.56 | |
| TOF | TIMER | | 12 | 8 | 8 | 0.13 | | 0.15 | | 0.15 | |
| TON | TIMER | | 12 | 8 | 8 | 0.19 | | 0.20 | | 0.20 | |
| TRN | DINT | | 52 | 40 | 40 | 3.74 | | 4.18 | | 4.18 | |
| TRN | REAL | | 104 | 92 | 92 | 6.27 | | 6.97 | | 6.97 | |
| UID | n/a | | 28 | 28 | 28 | 13.73 | | 13.77 | | 13.77 | |
| UIE | n/a | | 28 | 28 | 28 | 13.65 | | 15.58 | | 15.58 | |
| UPPER | n/a | x = number of Source characters | 88 | 80.00 | 80 | 1.92 | + (x * 0.2) | 1.81 | + (x * 0.2) | 1.81 | + (x * 0.2) |
| XIC | BOOL | | 12 | 4 | 4 | 0.05 | | 0.06 | | 0.06 | |
| XIO | BOOL | | 12 | 4 | 4 | 0.05 | | 0.06 | | 0.06 | |
| XOR | DINT | | 48 | 28 | 28 | 0.21 | | 0.26 | | 0.26 | |
| XPY | REAL | Actual time depends on the values of the operands. | 72 | 52 | 52 | 97.31 | | 102.95 | | 102.95 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------------|------------------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 |
| ABL | n/a | | 48 | 44 | 44 | | 17.26 |
| ABS | DINT | | 44 | 32 | 32 | | 0.29 |
| ABS | REAL | | 68 | 56 | 56 | | 0.42 |
| ACB | n/a | | 48 | 44 | 52 | | 11.57 |
| ACL | n/a | | 56 | 56 | 64 | | 73.94 |
| ACS | REAL | | 60 | 48 | 48 | | 33.79 |
| ADD | DINT | | 48 | 28 | 28 | | 0.27 |
| ADD | REAL | | 64 | 44 | 44 | | 1.56 |
| AFI | n/a | | 4 | 4 | 4 | | 0.03 |
| AHL | n/a | | 64 | 60 | 68 | | 7.51 |
| ALMA | n/a | .In is true, Alarm state doesn't change (input value doesn't change alarm level) | 284 | | 264 | | 23.4 |
| ALMA | n/a | HAlarm triggered | 284 | | 264 | | 110.5 |
| ALMA | n/a | HHAlarm triggered | 284 | | 264 | | 129.0 |
| ALMA | n/a | .In = FALSE | 284 | | 264 | | 21.2 |
| ALMD | n/a | Alarm state doesn't change (T>T or F>F) | 320 | | 304 | | 35.4 |
| ALMD | n/a | Alarm state changes (T>F or F>T) | 320 | | 304 | | 7.5 |
| AND | DINT | | 48 | 28 | 28 | | 0.30 |
| ARD | n/a | | 72 | 64 | 76 | | 54.91 |
| ARL | n/a | | 72 | 64 | 76 | | 52.75 |
| ASN | REAL | | 60 | 48 | 48 | | 31.03 |
| ATN | REAL | | 60 | 48 | 48 | | 22.08 |
| AVE | DINT | x = Length | 176 | 164 | 116 | | 14.64 + (x * 2.5) |
| AVE | INT | x = Length | 128 | 116 | 116 | | 14.74 + (x * 2.6) |
| AVE | REAL | x = Length | 128 | 116 | 116 | | 13.26 + (x * 3.4) |
| AVE | SINT | x = Length | 128 | 116 | 116 | | 14.93 + (x * 2.5) |
| AWA | n/a | | 76 | 68 | 68 | | 50.31 |
| AWT | n/a | | 76 | 68 | 68 | | 50.60 |
| BRK | n/a | | 44 | | 44 | | n/a |
| BSL | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | | 2.40 + ((x /32) * 0.2) |
| BSR | DINT | x = Length Round up x /32 to a whole number. | 64 | 52 | 52 | | 2.61 + ((x /32) * 0.2) |
| BTD | DINT | | 64 | 52 | 52 | | 2.87 |
| CLR | DINT | | 24 | 20 | 20 | | 0.15 |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------------|----------------|--------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 | |
| CLR | REAL | | 24 | 20 | 20 | | 0.18 | |
| CMP | n/a | e = time for the operators in the expression | 92 | 76 | 76 | | 1.48 | + e |
| CONCAT | n/a | x = number of characters in Source A + number of characters in Source | 120 | 108 | 116 | | 2.38 | + (x * 0.2) |
| COP | DINT | | 72 | 64 | 64 | | 3.09 | + (x * 0.2) |
| COP | INT | | 72 | 64 | 64 | | 2.90 | + (x * 0.0) |
| COP | REAL | | 72 | 64 | 64 | | 3.08 | + (x * 0.2) |
| COP | SINT | | 72 | 64 | 64 | | 2.96 | + (x * 0.04) |
| COS | REAL | | 152 | 140 | 48 | | 26.56 | |
| CPS | DINT | x = Length | 72 | | 64 | | 4.72 | + (x * 0.2) |
| CPS | INT | x = Length | 72 | | 64 | | 4.52 | + (x * 0.1) |
| CPS | REAL | x = Length | 72 | | 64 | | 4.74 | + (x * 0.2) |
| CPS | SINT | | 72 | 64 | 64 | | 4.60 | + (x * 0.04) |
| CPT | n/a | e = time for the operators in the expression | 80 | 96 | | | 1.68 | + e |
| CTD | Counter | | 12 | 8 | 8 | | 0.18 | |
| CTU | Counter | | 12 | 8 | 8 | | 0.18 | |
| DDT | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 5.10 | + (x * 0.4) |
| DDT | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 8.10 | + (x * 0.4) |
| DDT | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 11.22 | + (x * 0.4) |
| DEG | REAL | | 64 | 52 | 52 | | 1.60 | |
| DELETE | n/a | x = number of Destination characters | 108 | 100 | 100 | | 2.23 | + (x * 0.2) |
| Digital | Static | | | | | | 8.50 | |
| Digital | Dynamic | | | | | | 35.10 | |
| DIV | DINT | | 64 | 44 | 44 | | 5.24 | |
| DIV | REAL | | 64 | 44 | 44 | | 1.98 | |
| DTOS | n/a | x = number of Destination characters | 76 | 64 | 64 | | 7.38 | + (x * 0.1) |
| DTR | DINT | | 60 | 40 | 40 | | 1.03 | |
| EOT | | | 56 | 52 | 52 | | 3.5 | |
| EQU | DINT | | 36 | 20 | 20 | | 0.19 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------------|----------------|-------------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 | |
| EQU | REAL | | 36 | 20 | 20 | | 0.17 | |
| EVENT | | | 44 | NA | 44 | | 17.2 | |
| FAL | n/a | | 132 | 116 | 108 | | 4.96 | + (x * 1.8) |
| FAL | REAL | | | | | | | |
| FBC | DINT | 0 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 3.97 | + (x * 0.4) |
| FBC | DINT | 1 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 7.96 | + (x * 0.4) |
| FBC | DINT | 2 mismatches x = number of bits to compare Based on ALL mode | 96 | 72 | 72 | | 10.83 | + (x * 0.4) |
| FFL | DINT | | 80 | 60 | 64 | | 3.16 | |
| FFL | INT | | 80 | 64 | 64 | | 3.34 | |
| FFL | REAL | | 80 | 64 | 64 | | 3.16 | |
| FFL | SINT | | 80 | 64 | 64 | | 3.05 | |
| FFU | DINT | x = Length | 76 | 64 | 64 | | 3.73 | + (x * 0.2) |
| FFU | INT | x = Length | 76 | 64 | 64 | | 3.65 | + (x * 0.3) |
| FFU | REAL | x = Length | 76 | 64 | 64 | | 3.75 | + (x * 0.2) |
| FFU | SINT | x = Length | 76 | 64 | 64 | | 3.43 | + (x * 0.2) |
| FIND | n/a | | 112 | 100 | 100 | | 2.19 | |
| FLL | DINT | x = Length | 72 | 60 | 60 | | 2.30 | + (x * 0.1) |
| FLL | INT | x = Length | 72 | 60 | 60 | | 2.03 | + (x * 0.1) |
| FLL | REAL | x = Length | 72 | 60 | 60 | | 2.30 | + (x * 0.1) |
| FLL | SINT | x = Length | 72 | 60 | 60 | | 1.91 | + (x * 0.1) |
| FOR | DINT | x = Terminal value/Step size | 72 | 64.00 | 68 | | 5.39 | + (x * 2.4) |
| FRD | n/a | | 52 | 40 | 40 | | 3.14 | |
| FSC | n/a | x = length of file, e = execution time for compare expression | 152 | 140 | 140 | | 5.36 | + (x * (1.8 + e)) |
| GEQ | DINT | | 36 | 20 | 20 | | 0.19 | |
| GEQ | REAL | | 52 | 36 | 36 | | 0.30 | |
| GRT | DINT | | 36 | 20 | 20 | | 0.19 | |
| GRT | REAL | | 52 | 36 | 36 | | 0.35 | |
| GSV | n/a | | 84.0 | 76 | 76 | See GSV SSV Attributes. | | |
| INSERT | n/a | x = number of Destination characters | 128 | 116 | 116 | | 2.93 | + (x * 0.2) |
| IOT | n/a | | 60 | NA | 60 | | 3.2 | |
| JMP | n/a | | 44 | 24 | 40 | | 0.53 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (µs) | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 | |
| JSR | n/a | no parameters | 60 | 56 | 60 | | 5.54 | |
| JSR/RET | DINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | | 9.85 | + (x * 1.8) |
| JSR/RET | INT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | | 8.93 | + (x * 2.2) |
| JSR/RET | REAL | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | | 9.36 | + (x * 1.9) |
| JSR/RET | SINT | x = number of parameters The time is for the JSR/RET pair. | 100 | 100 | 100 | | 9.95 | + (x * 1.9) |
| JSR/SBR | DINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | | 9.92 | + (x * 1.8) |
| JSR/SBR | INT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | | 10.20 | + (x * 2.1) |
| JSR/SBR | REAL | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | | 9.85 | + (x * 1.8) |
| JSR/SBR | SINT | x = number of parameters The time is for the JSR/SBR | 100 | 100 | 100 | | 10.29 | + (x * 1.9) |
| LBL | n/a | | 16 | 12 | 16 | | 0.08 | |
| LEQ | DINT | | 36 | 20 | 20 | | 0.19 | |
| LEQ | REAL | | 52 | 36 | 36 | | 0.29 | |
| LES | DINT | | 36 | 20 | 20 | | 0.18 | |
| LES | REAL | | 52 | 36 | 36 | | 0.29 | |
| LFL | DINT | | 80 | 64 | 64 | | 3.16 | |
| LFL | INT | | 80 | 64 | 64 | | 3.36 | |
| LFL | REAL | | 80 | 64 | 64 | | 4.18 | |
| LFL | SINT | | 80 | 64 | 64 | | 3.05 | |
| LFU | DINT | | 76 | 64 | 64 | | 4.20 | |
| LFU | INT | | 76 | 64 | 64 | | 3.98 | |
| LFU | REAL | | 76 | 64 | 64 | | 4.18 | |
| LFU | SINT | | 76 | 64 | 64 | | 3.64 | |
| LIM | DINT | | 76 | 52 | 52 | | 0.40 | |
| LIM | REAL | | 68 | 44 | 44 | | 1.21 | |
| LN | REAL | | 60 | 48 | 48 | | 20.43 | |
| LOG | REAL | | 60 | 48 | 48 | | 20.33 | |
| LOWER | n/a | x = number of Source characters | 88 | 80 | 80 | | 1.75 | + (x * 0.2) |
| MAAT | n/a | | 56 | | 56 | | | |
| MAFR | n/a | | 56 | | 56 | | | |
| MAG | n/a | | 172 | | 172 | | | |
| MAH | n/a | switch/marker | 56 | | 56 | | | |
| MAHD | n/a | | 72 | | 72 | | | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | |
|--------------------|-----------|---------------------------------------|----------------|-----------|------------|-----------------------------------|----------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 |
| MAJ | n/a | | 116 | | 148 | | |
| MAJ | n/a | w/ merge | 188 | | 148 | | |
| MAM | n/a | | 124 | | 156 | | |
| MAM | n/a | w/ merge | 204 | | 156 | | |
| MAOC | n/a | | 476 | | 476 | | |
| MAPC | n/a | | 168 | | 164 | | |
| MAR | n/a | | 96 | | 96 | | |
| MAS | n/a | all w/ move and jog running | 84 | | 104 | | |
| MAS | n/a | individual motion types | 120 | | 104 | | |
| MASD | n/a | | 56 | | 56 | | |
| MASR | n/a | | 56 | | 56 | | |
| MATC | n/a | | 124 | | 120 | | |
| MAW | n/a | | 72 | | 72 | | |
| MCCD | n/a | | 44 | | 40 | | |
| MCCM | n/a | | 44 | | 40 | | |
| MCCP | n/a | cubic | 180 | | 172 | | |
| MCCP | n/a | linear | 180 | | 180 | | |
| MCD | n/a | | 96 | | 96 | | |
| MCLM | n/a | | 44 | | 40 | | |
| MCR | n/a | | 4 | 4 | 4 | | 0.03 |
| MCS | n/a | | 44 | | 40 | | |
| MCSD | n/a | | 44 | | 40 | | |
| MCSR | n/a | | 44 | | 40 | | |
| MCSV | n/a | | 44 | | 40 | | |
| MCT | n/a | | 44 | | 40 | | |
| MCTP | n/a | | 44 | | 40 | | |
| MDF | n/a | | 56 | | 56 | | |
| MDO | n/a | | 72 | | 72 | | |
| MDOC | n/a | | 120 | | 120 | | |
| MDR | n/a | | 64 | | 64 | | |
| MDW | n/a | | 56 | | 56 | | |
| MEQ | DINT | | 32 | 32 | 32 | | 0.29 |
| MGPS | n/a | hard shutdown w/ move and jog running | 60 | | 60 | | |
| MGPS | n/a | fast shutdown w/ move and jog running | 60 | | 60 | | |
| MGPS | n/a | fast stop w/ move and jog | 60 | | 60 | | |
| MGS | n/a | w/ move and jog running | 60 | | 60 | | |
| MGSD | n/a | | 52 | | 52 | | |
| MGSP | n/a | | 52 | | 52 | | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | | |
|--------------------|-----------|--------------------------------------|----------------|-----------|------------|-----------------------------------|--|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | | | DriveLogix5730 | |
| MGSR | n/a | | 52 | | 52 | | | | |
| MID | n/a | x = number of Destination characters | 108 | 100 | 100 | | | 2.30 | + (x * 0.2) |
| MOD | DINT | | 64 | 44 | 44 | | | 8.20 | |
| MOD | REAL | | 64 | 44 | 44 | | | 10.39 | |
| MOV | DINT-DINT | | 36 | 24 | 24 | | | 0.21 | |
| MOV | REAL-REAL | | 60 | 48 | 48 | | | 0.40 | |
| MRAT | n/a | | 56 | | 56 | | | | |
| MRHD | n/a | | 64 | | 64 | | | | |
| MRP | n/a | | 72 | | 72 | | | | |
| MSF | n/a | | 56 | | 56 | | | | |
| MSG | n/a | | 36 | 36 | 36 | | | 34.80 | |
| MSO | n/a | | 56 | | 56 | | | | |
| MUL | DINT | | 64 | 44 | 44 | | | 4.60 | |
| MUL | REAL | | 64 | 44 | 44 | | | 1.59 | |
| MVM | n/a | | 64 | 44 | 44 | | | 2.58 | |
| NEG | DINT | | 40 | 28 | 28 | | | 0.26 | |
| NEG | REAL | | 68 | 56 | 56 | | | 0.44 | |
| NEQ | DINT | | 36 | 20 | 20 | | | 0.19 | |
| NEQ | REAL | | 36 | 20 | 20 | | | 0.19 | |
| NOP | n/a | | 4 | 4 | 4 | | | 0.03 | |
| NOT | DINT | | 40 | 28 | 28 | | | 0.25 | |
| ONS | BOOL | | 40 | 36 | 36 | | | 1.24 | |
| OR | DINT | | 48 | 28 | 28 | | | 0.32 | |
| OSF | BOOL | | 52 | 44 | 44 | | | 1.08 | |
| OSR | BOOL | | 52 | 44 | 44 | | | 1.16 | |
| OTE | BOOL | | 12 | 4 | 4 | | | 0.08 | |
| OTL | BOOL | | 12 | 4 | 4 | | | 0.08 | |
| OTU | BOOL | | 12 | 4 | 4 | | | 0.08 | |
| PATT | n/a | | 56 | 52 | 48 | | | 25.1 | |
| PCLF | n/a | | 44 | 44 | 40 | | | 6.9 | |
| PCMD | n/a | | 64 | 60 | 56 | | | 40.2 | |
| PDET | n/a | | 44 | 44 | 40 | | | 21.1 | |
| PFL | n/a | | 48 | 44 | 40 | | | 1.5 | |
| PID | DINT | independent - slave mode | 252 | 228 | 228 | | | 68.3 | |
| PID | DINT | independent | 252 | 228 | 228 | | | 65.9 | |
| PID | DINT | ISA - dependent | 252 | 228 | 228 | | | 70.5 | |
| PID | DINT | manual mode | 252 | 228 | 228 | | | 64.6 | |
| PID | DINT | set output mode | 252 | 228 | 228 | | | 61.6 | |
| PID | REAL | independent - slave mode | 120 | 92 | 92 | | | 64.9 | |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | | |
|--------------------|-----------|---|----------------|-----------|------------|-----------------------------------|--|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | | | DriveLogix5730 | |
| PID | REAL | independent | 120 | 92 | 92 | | | 61.8 | |
| PID | REAL | ISA - dependent | 120 | 92 | 92 | | | 68.3 | |
| PID | REAL | manual mode | 120 | 92 | 92 | | | 58.0 | |
| PID | REAL | set output mode | 120 | 92 | 92 | | | 59.2 | |
| POVR | n/a | | 64 | 44 | 56 | | | 26.4 | |
| PPD | n/a | | 32 | 36 | 32 | | | 3.2 | |
| PRNP | n/a | | 32 | 36 | 32 | | | 2.7 | |
| PSC | n/a | | 32 | 36 | 32 | | | 1.8 | |
| PXRQ | n/a | | 76 | 68 | 68 | | | 2.4 | |
| RAD | REAL | | 64 | 52 | 52 | | | 1.60 | |
| RES | T,C or R | | 12 | 8 | 8 | | | 0.13 | |
| RET | n/a | in FOR loop | 40 | 40 | 40 | | | 2.15 | |
| RET | n/a | no parameters | 40 | 40 | 40 | | | 1.94 | |
| RTO | TIMER | | 12 | 8 | 8 | | | 0.18 | |
| RTOS | n/a | example 1 Source = 1.234 | 76 | | 64 | | | 73.4 | |
| RTOS | n/a | example 2 Source = 1234.5677 | 76 | 64 | 64 | | | 76.1 | |
| SBR | n/a | no parameters | 40 | 40 | 40 | | | 2.32 | |
| SFP | n/a | pause | 64 | 60 | 64 | | | 9.4 | |
| SFP | n/a | execute | 64 | 60 | 64 | | | 7.0 | |
| SFR | n/a | | 72 | 64 | 68 | | | 16.5 | |
| SIN | REAL | | 60 | 48 | 48 | | | 26.59 | |
| SIZE | DINT | | 124 | 116 | 116 | | | 1.68 | |
| SQI | DINT | | 72 | 48 | 48 | | | 1.29 | |
| SQL | DINT | | 64 | 48 | 48 | | | 1.98 | |
| SQO | DINT | | 64 | 44 | 44 | | | 2.05 | |
| SQR | DINT | | 52 | 40 | 40 | | | 2.73 | |
| SQR | REAL | | 52 | 40 | 40 | | | 9.72 | |
| SRT | DINT | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | | | 11.92 | |
| SRT | REAL | Varies with the length and randomness of the numbers. | 116 | 108 | 108 | | | 12.33 | |
| SSV | n/a | | 84.0 | 76.0 | 76 | See GSV SSV Attributes. | | | |
| STD | DINT | x = Length | 116 | 104 | 104 | | | 33.80 | + (x * 9.4) |
| STD | INT | x = Length | 116 | 104 | 104 | | | 34.40 | + (x * 9.7) |
| STD | REAL | x = Length | 116 | 104 | 104 | | | 32.97 | + (x * 9.3) |
| STD | SINT | x = Length | 116 | 104 | 104 | | | 33.51 | + (x * 9.4) |

| Ladder Instruction | Data Type | Notes | Memory (bytes) | | | Execution Time if True (μ s) | | |
|--------------------|-----------|--|----------------|-----------|------------|-----------------------------------|----------------|-------------|
| | | | 1756-L64 | 1769-L23E | All others | | DriveLogix5730 | |
| STOD | n/a | example 1 Source = 1234 | 80 | 72 | 72 | | 41.45 | |
| STOD | n/a | example 2 Source = ABCDEFGH1234ABCDEFGH | 80 | | 72 | | 48.5 | |
| STOR | n/a | example 1 Source = 1.234 | 80 | 72 | 72 | | 49.42 | |
| STOR | n/a | example 2 Source = ABCDEFGH1.234ABCDEFGH | 80 | | 72 | | 54.72 | |
| SUB | DINT | | 48 | 28 | 28 | | 0.26 | |
| SUB | REAL | | 64 | 44 | 44 | | 1.59 | |
| SWPB | DINT | High/Low | 72 | 64 | 64 | | 1.30 | |
| SWPB | DINT | Reverse | 72 | 64 | 64 | | 1.31 | |
| SWPB | DINT | Word | 72 | 64 | 64 | | 1.26 | |
| TAN | REAL | | 60 | 48 | 48 | | 30.89 | |
| TND | n/a | | 12 | 12 | 12 | | 0.01 | |
| TOD | n/a | | 52 | 40 | 40 | | 4.19 | |
| TOF | TIMER | | 12 | 8 | 8 | | 0.13 | |
| TON | TIMER | | 12 | 8 | 8 | | 0.18 | |
| TRN | DINT | | 52 | 40 | 40 | | 3.84 | |
| TRN | REAL | | 104 | 92 | 92 | | 6.42 | |
| UID | n/a | | 28 | 28 | 28 | | 13.53 | |
| UIE | n/a | | 28 | 28 | 28 | | 14.55 | |
| UPPER | n/a | x = number of Source characters | 88 | 80.00 | 80 | | 1.71 | + (x * 0.2) |
| XIC | BOOL | | 12 | 4 | 4 | | 0.05 | |
| XIO | BOOL | | 12 | 4 | 4 | | 0.05 | |
| XOR | DINT | | 48 | 28 | 28 | | 0.27 | |
| XPY | REAL | Actual time depends on the values of the operands. | 72 | 52 | 52 | | 95.64 | |

| Instruction | Object | Attribute Name | True Time (µs) | | | | | |
|-------------|------------------|--------------------------------|----------------|----------------------|----------|----------------------|----------------|----------------|
| | | | 1769-L23 | 1769-L31, -L32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | 1756-L64, -L65 | DriveLogix5730 |
| GSV | CONTROLLER | DataTablePadPercentage | 4.60 | 4.62 | 4.16 | 4.17 | 4.16 | 4.54 |
| GSV | CONTROLLER | InhibitAutomaticFirmwareUpdate | 2.83 | 2.8 | 2.8 | 2.8 | 3.2 | 2.79 |
| GSV | CONTROLLER | KeepTestEditsOnSwitchOver | 2.82 | 3.20 | 2.91 | 2.89 | 2.90 | 2.79 |
| GSV | CONTROLLER | Name | 37.59 | 26.0 | 28.7 | 31.7 | 31.8 | 32.19 |
| GSV | CONTROLLER | RedundancyEnabled | 2.76 | 3.21 | 2.88 | 2.87 | 2.91 | 2.98 |
| GSV | CONTROLLER | ShareUnusedTimeSlice | 4.44 | 4.3 | 4.1 | 4.0 | 4.0 | 4.12 |
| GSV | CONTROLLER | TimeSlice | 4.52 | 4.65 | 4.14 | 4.14 | 4.17 | 4.14 |
| GSV | CONTROLLERDEVICE | DeviceName | 9.91 | 8.12 | 6.92 | 6.91 | 6.92 | 8.91 |
| GSV | CONTROLLERDEVICE | ProductCode | 4.29 | 4.56 | 4.12 | 4.11 | 4.10 | 4.67 |
| GSV | CONTROLLERDEVICE | ProductRev | 4.36 | 4.58 | 4.12 | 4.11 | 4.10 | 4.05 |
| GSV | CONTROLLERDEVICE | SerialNumber | 4.72 | 4.88 | 4.38 | 4.37 | 4.37 | 4.33 |
| GSV | CONTROLLERDEVICE | Status | 4.30 | 4.59 | 4.09 | 4.10 | 4.12 | 4.18 |
| GSV | CONTROLLERDEVICE | Type | 4.33 | 4.57 | 4.06 | 4.09 | 4.10 | 4.15 |
| GSV | CONTROLLERDEVICE | Vendor | 4.51 | 4.53 | 4.07 | 4.07 | 4.06 | 4.05 |
| GSV | CST | CurrentStatus | 4.42 | 4.31 | 3.88 | 3.89 | 3.88 | 3.87 |
| GSV | CST | CurrentValue | 8.58 | 8.65 | 8.66 | 8.44 | 8.45 | 8.70 |
| GSV | DF1 | ACKTimeout | 4.27 | 4.51 | 4.00 | 4.01 | 4.03 | 4.24 |
| GSV | DF1 | DiagnosticCounters | 28.42 | 32.42 | 27.81 | 25.30 | 23.80 | 31.07 |
| GSV | DF1 | DuplicateDetection | 4.00 | 4.14 | 3.71 | 3.72 | 3.70 | 3.66 |
| GSV | DF1 | EmbeddedResponseEnable | 3.89 | 4.14 | 3.71 | 3.70 | 3.71 | 3.82 |
| GSV | DF1 | EnableStoreFwd | 4.03 | 3.8 | 3.7 | 3.7 | 3.6 | |
| GSV | DF1 | ENQTransmitLimit | 3.92 | 4.14 | 3.70 | 3.69 | 3.72 | 3.69 |
| GSV | DF1 | EOTSuppression | 3.89 | 4.12 | 3.68 | 3.68 | 3.70 | 3.65 |
| GSV | DF1 | ErrorDetection | 3.93 | 4.14 | 3.69 | 3.69 | 3.69 | 3.83 |
| GSV | DF1 | MasterMessageTransmit | 3.92 | 4.14 | 3.73 | 3.71 | 3.70 | 3.67 |
| GSV | DF1 | MaxStationAddress | 3.92 | 4.16 | 3.72 | 3.70 | 3.71 | 3.66 |
| GSV | DF1 | NAKReceiveLimit | 4.00 | 4.14 | 3.69 | 3.69 | 3.72 | 3.74 |
| GSV | DF1 | NormalPollGroupSize | 4.06 | 4.24 | 3.77 | 3.79 | 4.25 | 3.92 |
| GSV | DF1 | PollingMode | 4.01 | 4.10 | 3.66 | 3.68 | 3.65 | 3.65 |
| GSV | DF1 | ReplyMessageWait | 4.51 | 4.51 | 4.04 | 4.04 | 4.03 | 4.02 |
| GSV | DF1 | SlavePollTimeout | 4.50 | 4.52 | 4.01 | 4.02 | 4.03 | 4.26 |
| GSV | DF1 | StationAddress | 4.08 | 4.19 | 3.76 | 3.76 | 3.78 | 4.12 |
| GSV | DF1 | TokenHoldFactor | 3.91 | 4.10 | 3.64 | 3.64 | 3.65 | 3.72 |
| GSV | DF1 | TransmitRetries | 3.88 | 4.15 | 3.66 | 3.64 | 3.65 | 3.65 |

| Instruction | Object | Attribute Name | True Time (μ s) | | | | | |
|-------------|------------|--------------------------|----------------------|--------------------------|----------|--------------------------|--------------------|--------------------|
| | | | 1769-L23 | 1769-L31, - L32, -L35 | 1768-L43 | 1756-L61, - L62, -L63 | 1756-L64, - L65 | DriveLogix573 0 |
| GSV | FAULTLOG | MajorEvents | 4.44 | 4.63 | 4.15 | 4.10 | 4.13 | 4.23 |
| GSV | FAULTLOG | MajorFaultBits | 4.73 | 4.91 | 4.40 | 4.37 | 4.40 | 4.49 |
| GSV | FAULTLOG | MinorEvents | 4.33 | 4.59 | 4.14 | 4.15 | 4.14 | 4.10 |
| GSV | FAULTLOG | MinorFaultBits | 4.61 | 4.90 | 4.39 | 4.38 | 4.40 | 4.38 |
| GSV | MESSAGE | ConnectionPath | 18.59 | 17.80 | 15.55 | 15.40 | 15.22 | 16.95 |
| GSV | MESSAGE | ConnectionRate | 5.00 | 5.18 | 4.65 | 4.64 | 4.68 | 4.70 |
| GSV | MESSAGE | LocalIndex | 39.03 | 24.5 | 28.1 | 31.5 | 30.7 | 34.30 |
| GSV | MESSAGE | MessageType | 3.00 | 3.46 | 3.15 | 3.14 | 3.16 | 3.15 |
| GSV | MESSAGE | Port | 3.15 | 3.45 | 3.12 | 3.12 | 3.16 | 3.26 |
| GSV | MESSAGE | TimeoutMultiplier | 3.57 | 3.44 | 3.09 | 3.11 | 3.14 | 3.11 |
| GSV | MESSAGE | UnconnectedTimeout | 5.10 | 5.17 | 4.65 | 4.63 | 4.68 | 4.67 |
| GSV | MODULE | EntryStatus | 4.09 | 4.16 | 3.73 | 3.79 | 3.78 | 3.85 |
| GSV | MODULE | FaultCode | 3.66 | 3.77 | 3.38 | 3.42 | 3.43 | 3.72 |
| GSV | MODULE | FaultInfo | 4.01 | 4.07 | 3.64 | 3.67 | 3.68 | 3.80 |
| GSV | MODULE | FirmwareSupervisorStatus | 34.76 | 23.7 | 28.8 | 30.8 | 33.9 | 31.57 |
| GSV | MODULE | ForceStatus | 3.58 | 3.76 | 3.33 | 3.33 | 3.34 | 3.44 |
| GSV | MODULE | Instance | 3.89 | 4.11 | 3.62 | 3.65 | 3.66 | 3.78 |
| GSV | MODULE | LEDStatus | 3.65 | 3.76 | 3.27 | 3.23 | 3.26 | 4.59 |
| GSV | MODULE | Mode | 4.86 | 5.16 | 4.59 | 4.61 | 4.62 | 3.35 |
| GSV | PROGRAM | DisableFlag | 2.96 | 3.45 | 3.08 | 3.07 | 3.12 | 3.17 |
| GSV | PROGRAM | Instance | 3.59 | 3.82 | 3.39 | 3.41 | 3.43 | 3.48 |
| GSV | PROGRAM | LastScanTime | 4.90 | 5.10 | 4.55 | 4.58 | 4.58 | 4.55 |
| GSV | PROGRAM | MajorFaultRecord | 10.36 | 10.88 | 9.68 | 9.76 | 9.72 | 9.77 |
| GSV | PROGRAM | MinorFaultRecord | 10.42 | 10.82 | 9.66 | 9.66 | 9.68 | 9.98 |
| GSV | PROGRAM | MaxScanTime | 3.84 | 3.95 | 3.56 | 3.59 | 3.62 | 3.60 |
| GSV | PROGRAM | Name | 41.02 | 29.3 | 29.9 | 35.1 | 37.3 | 37.66 |
| GSV | ROUTINE | Instance | 3.74 | 3.68 | 3.29 | 3.36 | 3.37 | 3.34 |
| GSV | ROUTINE | Name | 42.32 | 28.5 | 30.9 | 35.3 | 38.5 | 35.26 |
| GSV | SERIALPORT | BaudRate | 4.07 | 4.28 | 3.84 | 3.88 | 3.87 | 4.14 |
| GSV | SERIALPORT | ComDriverId | 3.79 | 3.6 | 3.5 | 3.4 | 3.3 | 3.52 |
| GSV | SERIALPORT | DCDWaitDelay | 3.91 | 3.7 | 4.0 | 3.6 | 3.5 | 3.63 |
| GSV | SERIALPORT | DataBits | 3.70 | 3.88 | 3.48 | 3.52 | 3.48 | 3.68 |
| GSV | SERIALPORT | Parity | 3.72 | 3.89 | 3.47 | 3.48 | 3.47 | 3.50 |
| GSV | SERIALPORT | RTSOffDelay | 3.86 | 4.00 | 3.57 | 3.56 | 3.58 | 3.58 |

| Instruction | Object | Attribute Name | True Time (µs) | | | | | |
|-------------|---------------|--------------------------------|----------------|----------------------|----------|----------------------|----------------|----------------|
| | | | 1769-L23 | 1769-L31, -L32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | 1756-L64, -L65 | DriveLogix5730 |
| GSV | SERIALPORT | RTSSendDelay | 3.91 | 4.04 | 3.57 | 3.57 | 3.60 | 3.65 |
| GSV | SERIALPORT | StopBits | 3.69 | 3.94 | 3.50 | 3.48 | 3.49 | 3.64 |
| GSV | TASK | DisableUpdateOutputs | 3.65 | 3.5 | 3.3 | 3.4 | 3.2 | 3.46 |
| GSV | TASK | EnableTimeout | 3.70 | 3.5 | 3.3 | 3.3 | 3.2 | 3.45 |
| GSV | TASK | Instance | 3.76 | 3.86 | 3.46 | 3.44 | 3.47 | 3.54 |
| GSV | TASK | InhibitTask | 3.76 | 3.5 | 3.3 | 3.4 | 3.3 | 3.57 |
| GSV | TASK | LastScanTime | 3.85 | 3.84 | 3.45 | 3.43 | 3.47 | 3.43 |
| GSV | TASK | MaxInterval | 38.68 | 6.62 | 5.91 | 5.89 | 5.93 | 32.34 |
| GSV | TASK | MaxScanTime | 3.75 | 3.85 | 3.44 | 3.46 | 3.49 | 3.61 |
| GSV | TASK | MinInterval | 37.90 | 6.65 | 5.91 | 5.95 | 5.94 | 34.86 |
| GSV | TASK | Name | 24.34 | 18.8 | 21.3 | 19.9 | 19.6 | 19.28 |
| GSV | TASK | OverlapCount | 3.65 | 4.6 | 4.3 | 4.3 | 4.3 | 3.42 |
| GSV | TASK | Priority | 3.26 | 3.45 | 3.12 | 3.14 | 3.12 | 3.26 |
| GSV | TASK | Rate | 3.64 | 3.84 | 3.45 | 3.48 | 3.47 | 3.49 |
| GSV | TASK | StartTime | 36.83 | 6.63 | 5.91 | 5.92 | 5.95 | 33.45 |
| GSV | TASK | Status | 3.63 | 4.6 | 4.3 | 4.3 | 4.3 | 3.43 |
| GSV | TASK | Watchdog | 3.75 | 3.82 | 3.42 | 3.46 | 3.50 | 3.60 |
| GSV | WALLCLOCKTIME | ApplyDST | 2.76 | 1.9 | 3.0 | 3.1 | 2.5 | 3.02 |
| GSV | WALLCLOCKTIME | CSTOffset | 35.76 | 5.84 | 5.22 | 5.22 | 5.24 | 32.02 |
| GSV | WALLCLOCKTIME | CurrentValue | 7.76 | 8.47 | 8.50 | 9.26 | 8.35 | 8.92 |
| GSV | WALLCLOCKTIME | DSTAdjustment | 4.76 | 3.9 | 4.0 | 4.1 | 3.1 | 5.02 |
| GSV | WALLCLOCKTIME | DateTime | 12.06 | 12.16 | 11.88 | 11.56 | 11.58 | 12.02 |
| GSV | WALLCLOCKTIME | LocalDateTime | 207.56 | 201.8 | 193.1 | 193.2 | 193.6 | 202.92 |
| GSV | WALLCLOCKTIME | TimeZoneString | 6.76 | 4.9 | 6.2 | 5.1 | 5.9 | 6.02 |
| SSV | CONTROLLER | InhibitAutomaticFirmwareUpdate | 2.71 | 2.7 | 2.8 | 2.7 | 2.7 | 2.86 |
| SSV | CONTROLLER | ShareUnusedTimeSlice | 2.78 | 2.8 | 2.7 | 2.8 | 2.6 | 2.89 |
| SSV | CONTROLLER | TimeSlice | 7.78 | 8.44 | 7.45 | 7.70 | 8.17 | 7.46 |
| SSV | DF1 | PendingACKTimeout | 42.02 | 5.40 | 4.74 | 4.82 | 4.79 | 39.13 |
| SSV | DF1 | PendingDuplicateDetection | 39.67 | 5.03 | 4.40 | 4.46 | 4.48 | 36.48 |
| SSV | DF1 | PendingENQTransmitLimit | 41.97 | 5.17 | 4.58 | 4.59 | 4.62 | 38.02 |
| SSV | DF1 | PendingEOTSuppression | 42.66 | 5.18 | 4.58 | 4.59 | 4.62 | 37.89 |
| SSV | DF1 | PendingEmbeddedResponseEnable | 42.49 | 5.28 | 4.64 | 4.66 | 4.68 | 37.18 |
| SSV | DF1 | PendingEnableStoreFwd | 41.03 | 29.5 | 34.8 | 37.9 | 38.0 | 36.55 |
| SSV | DF1 | PendingErrorDetection | 40.93 | 5.28 | 4.65 | 4.66 | 4.72 | 37.70 |

| Instruction | Object | Attribute Name | True Time (μ s) | | | | | |
|-------------|------------|------------------------------|----------------------|--------------------------|----------|--------------------------|--------------------|--------------------|
| | | | 1769-L23 | 1769-L31, - L32, -L35 | 1768-L43 | 1756-L61, - L62, -L63 | 1756-L64, - L65 | DriveLogix573 0 |
| SSV | DF1 | PendingMasterMessageTransmit | 40.80 | 5.28 | 4.66 | 4.70 | 4.72 | 36.74 |
| SSV | DF1 | PendingMaxStationAddress | 40.21 | 5.29 | 4.66 | 4.70 | 4.71 | 36.62 |
| SSV | DF1 | PendingNAKReceiveLimit | 40.07 | 5.17 | 4.57 | 4.63 | 4.62 | 36.64 |
| SSV | DF1 | PendingNormalPollGroupSize | 40.92 | 5.22 | 4.60 | 4.61 | 4.69 | 36.84 |
| SSV | DF1 | PendingPollingMode | 40.86 | 5.30 | 4.66 | 4.71 | 4.72 | 37.84 |
| SSV | DF1 | PendingReplyMessageWait | 40.93 | 5.39 | 4.76 | 4.83 | 4.87 | 37.45 |
| SSV | DF1 | PendingSlavePollTimeout | 40.98 | 5.37 | 4.77 | 4.82 | 4.84 | 37.62 |
| SSV | DF1 | PendingStationAddress | 39.95 | 5.26 | 4.65 | 4.72 | 4.74 | 37.31 |
| SSV | DF1 | PendingTokenHoldFactor | 39.81 | 36.28 | 36.62 | 37.96 | 37.09 | 37.11 |
| SSV | DF1 | PendingTransmitRetries | 40.96 | 5.19 | 4.51 | 4.63 | 4.62 | 36.64 |
| SSV | FAULTLOG | MajorEvents | 2.80 | 3.24 | 2.90 | 2.89 | 2.88 | 2.92 |
| SSV | FAULTLOG | MajorFaultBits | 2.96 | 3.43 | 3.08 | 3.03 | 3.03 | 2.97 |
| SSV | FAULTLOG | MinorEvents | 2.78 | 3.27 | 2.91 | 2.88 | 2.90 | 2.82 |
| SSV | FAULTLOG | MinorFaultBits | 3.05 | 3.42 | 3.06 | 3.03 | 3.09 | 3.07 |
| SSV | MESSAGE | ConnectionPath | 26.72 | 25.75 | 21.91 | 26.58 | 27.64 | 25.46 |
| SSV | MESSAGE | ConnectionRate | 10.74 | 10.21 | 9.12 | 9.09 | 9.09 | 10.19 |
| SSV | MESSAGE | LocalIndex | 38.03 | 24.0 | 26.6 | 31.7 | 33.7 | 35.57 |
| SSV | MESSAGE | MessageType | 12.28 | 18.0 | 17.4 | 21.2 | 20.9 | 11.55 |
| SSV | MESSAGE | Port | 10.89 | 9.99 | 9.31 | 9.19 | 9.21 | 9.79 |
| SSV | MESSAGE | TimeoutMultiplier | 11.94 | 9.88 | 8.82 | 8.71 | 8.76 | 10.16 |
| SSV | MESSAGE | UnconnectedTimeout | 9.84 | 10.21 | 9.48 | 9.03 | 9.07 | 9.90 |
| SSV | MODULE | Mode | 2.95 | 3.40 | 3.04 | 3.11 | 3.08 | 3.08 |
| SSV | PROGRAM | DisableFlag | 9.43 | 9.88 | 8.47 | 8.79 | 8.74 | 8.94 |
| SSV | PROGRAM | LastScanTime | 5.25 | 5.62 | 4.95 | 5.06 | 5.09 | 4.94 |
| SSV | PROGRAM | MajorFaultRecord | 11.92 | 12.62 | 10.96 | 13.65 | 13.59 | 11.23 |
| SSV | PROGRAM | MinorFaultRecord | 11.97 | 12.74 | 11.09 | 11.34 | 11.35 | 4.83 |
| SSV | PROGRAM | MaxScanTime | 5.19 | 5.44 | 4.76 | 4.92 | 4.90 | 11.54 |
| SSV | SERIALPORT | PendingBaudRate | 39.89 | 35.74 | 33.89 | 36.37 | 36.77 | 34.85 |
| SSV | SERIALPORT | PendingComDriverId | 37.90 | 25.9 | 30.6 | 34.1 | 35.7 | 33.36 |
| SSV | SERIALPORT | PendingDCDDelay | 41.04 | 27.8 | 32.3 | 34.2 | 35.9 | 37.14 |
| SSV | SERIALPORT | PendingDataBits | 40.21 | 34.96 | 34.02 | 37.26 | 36.68 | 35.88 |
| SSV | SERIALPORT | PendingParity | 38.79 | 4.80 | 4.24 | 4.31 | 4.33 | 34.16 |
| SSV | SERIALPORT | PendingRTSOffDelay | 40.75 | 4.75 | 4.20 | 4.26 | 4.29 | 34.86 |
| SSV | SERIALPORT | PendingRTSSendDelay | 41.25 | 4.72 | 4.20 | 4.28 | 4.30 | 35.66 |

| Instruction | Object | Attribute Name | True Time (µs) | | | | | |
|-------------|---------------|----------------------|----------------|----------------------|----------|----------------------|----------------|----------------|
| | | | 1769-L23 | 1769-L31, -L32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | 1756-L64, -L65 | DriveLogix5730 |
| SSV | SERIALPORT | PendingStopBits | 39.26 | 36.42 | 35.87 | 36.60 | 37.25 | 35.34 |
| SSV | TASK | DisableUpdateOutputs | 11.48 | 5.6 | 5.5 | 5.7 | 5.6 | 11.05 |
| SSV | TASK | EnableTimeout | 12.45 | 5.6 | 5.5 | 5.6 | 5.5 | 10.42 |
| SSV | TASK | InhibitTask | 12.52 | 5.6 | 5.7 | 5.7 | 5.6 | 11.33 |
| SSV | TASK | LastScanTime | 6.66 | 7.12 | 6.28 | 8.62 | 7.17 | 6.32 |
| SSV | TASK | MaxInterval | 36.73 | 9.89 | 8.61 | 8.79 | 8.77 | 34.62 |
| SSV | TASK | MaxScanTime | 6.61 | 7.21 | 6.28 | 6.79 | 6.78 | 6.43 |
| SSV | TASK | MinInterval | 37.67 | 9.88 | 8.61 | 8.70 | 8.73 | 33.92 |
| SSV | TASK | OverlapCount | 6.68 | 2.8 | 3.0 | 2.8 | 2.9 | 6.30 |
| SSV | TASK | Priority | 28.32 | 21.2 | 17.0 | 16.8 | 19.7 | 26.71 |
| SSV | TASK | Rate | 11.28 | 5.6 | 5.7 | 5.8 | 5.7 | 10.70 |
| SSV | TASK | StartTime | 37.27 | 9.87 | 8.53 | 8.71 | 8.71 | 34.23 |
| SSV | TASK | Status | 6.89 | 2.9 | 2.9 | 2.9 | 2.7 | 6.29 |
| SSV | TASK | Watchdog | 11.48 | 11.83 | 10.67 | 11.90 | 11.90 | 10.56 |
| SSV | WALLCLOCKTIME | ApplyDST | 4.16 | 3.9 | 4.2 | 3.1 | 3.9 | 4.02 |
| SSV | WALLCLOCKTIME | CSTOffset | 33.66 | 172.62 | 180.78 | 166.84 | 140.60 | 33.02 |
| SSV | WALLCLOCKTIME | CurrentValue** | 10.76 | 10.96 | 11.60 | 10.40 | 10.40 | 10.12 |
| SSV | WALLCLOCKTIME | DSTAdjustment | 4.56 | 3.9 | 4.2 | 3.1 | 3.9 | 4.32 |
| SSV | WALLCLOCKTIME | DateTime | 21.86 | 37.44 | 40.98 | 38.40 | 40.60 | 21.02 |
| SSV | WALLCLOCKTIME | LocalDateTime** | 28.66 | 28.9 | 31.2 | 25.6 | 27.6 | 27.02 |
| SSV | WALLCLOCKTIME | TimeZoneString | 20.76 | 18.9 | 19.2 | 18.1 | 18.8 | 20.22 |

**Note: The execution time for these attributes can double or triple, depending on the value being set.

| Function block Element | Notes | Memory (bytes) | | Execution time (μ s) | | | | | | |
|------------------------|-------|----------------|------------|---------------------------|----------------------|----------|----------------------|--------|--|--------|
| | | 1756-L64 | All Others | 1769-L23E | 1769-L31, L-32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | | | |
| ABS | | | | 0.7 | | 0.8 | | 0.9 | | 0.8 |
| ACS | | | | 38.7 | | 36.1 | | 32.5 | | 31.9 |
| ADD | | | | 2.2 | | 2.0 | | 1.8 | | 2.1 |
| ALM | | | 68 | 23.6 | | 27.3 | | 22.0 | | 28.6 |
| AND | | | | 0.5 | | 0.7 | | 0.6 | | 0.7 |
| ASN | | | | 36.8 | | 34.3 | | 30.9 | | 30.9 |
| ATN | | | | 26.2 | | 24.2 | | 22.1 | | 22.0 |
| BAND | | | 68 | 2.3 | | 2.2 | | 2.1 | | 2.0 |
| BNOT | | | 68 | 2.9 | | 2.8 | | 2.4 | | 2.0 |
| BOR | | | 68 | 2.1 | | 2.2 | | 2.7 | | 3.0 |
| BTDT | | | | 4.1 | | 3.8 | | 3.5 | | 3.7 |
| BXOR | | | 68 | 2.2 | | 3.4 | | 2.6 | | 2.0 |
| COS | | | | 31.3 | | 29.1 | | 26.3 | | 26.1 |
| CTUD | | | 68 | 8.6 | | 7.9 | | 9.5 | | 7.8 |
| D2SD | | | 68 | 24.9 | | 27.7 | | 18.3 | | 23.2 |
| D3SD | | | | 28.9 | | 34.9 | | 28.7 | | 33.3 |
| DEDT | | | 152 | 40.3 | | 44.5 | | 43.0 | | 41.4 |
| DEG | | | | 2.3 | | 2.2 | | 1.9 | | 2.0 |
| DERV | | | 68 | 39.6 | | 36.4 | | 35.0 | | 31.4 |
| DFF | | | 68 | 2.9 | | 2.5 | | 2.5 | | 2.4 |
| DIV | | | | 2.6 | | 2.8 | | 2.2 | | 2.4 |
| EQU | | | | 0.7 | | 0.8 | | 0.9 | | 0.9 |
| ESEL-Average Sel. | | | 68 | 14.6 | | 12.7 | | 11.4 | | 10.0 |
| ESEL-High Select | | | 68 | 13.6 | | 13.5 | | 11.2 | | 10.8 |
| ESEL-Low Select | | | 68 | 14.1 | | 12.9 | | 12.7 | | 10.0 |
| ESEL-Manual | | | 68 | 8.3 | | 9.5 | | 7.5 | | 6.4 |
| ESEL-Median Sel. | | | 68 | 19.7 | | 20.4 | | 17.5 | | 15.6 |
| FGEN | | | 160 | 28.8 | | 28.5 | | 20.1 | | 28.9 |
| FRD | | | | 4.0 | | 3.7 | | 3.5 | | 3.5 |
| GEQ | | | | 0.9 | | 0.9 | | 0.9 | | 1.0 |
| GRT | | | | 0.9 | | 1.0 | | 0.9 | | 1.0 |
| HLL | | | 68 | 6.8 | | 4.2 | | 5.4 | | 3.7 |
| HPF | | | 68 | 51.4 | | 52.1 | | 52.1 | | 49.5 |
| ImmDINT | | | | < 0.01 | | < 0.01 | | < 0.01 | | < 0.01 |
| ImmREAL | | | | < 0.01 | | < 0.01 | | < 0.01 | | < 0.01 |

| Function block Element | Notes | Memory (bytes) | | Execution time (μ s) | | | | | | | |
|------------------------|-----------------------|----------------|------------|---------------------------|----------------------|----------|----------------------|------|-------------|------|-------------|
| | | 1756-L64 | All Others | 1769-L23E | 1769-L31, L-32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | | | | |
| INTG | | | 68 | 31.7 | | 33.9 | | 34.3 | | 27.7 | |
| IRefBOOL | | | | 0.31 | | 0.29 | | 0.26 | | 0.26 | |
| IRefDINT | | | | 0.33 | | 0.32 | | 0.28 | | 0.28 | |
| IRefREAL | | | | 0.55 | | 0.52 | | 0.46 | | 0.46 | |
| JKFF | | | 68 | 2.7 | | 2.7 | | 3.0 | | 4.3 | |
| LDL2 | | | 68 | 61.0 | | 59.0 | | 60.9 | | 53.3 | |
| LDLG | | | 68 | 48.2 | | 47.9 | | 47.9 | | 43.8 | |
| LEQ | | | | 0.9 | | 1.0 | | 0.9 | | 1.0 | |
| LES | | | | 1.0 | | 0.9 | | 1.0 | | 1.1 | |
| LIM | | | | 2.1 | | 2.0 | | 1.9 | | 1.9 | |
| LN | | | | 24.4 | | 22.6 | | 20.5 | | 20.3 | |
| LOG | | | | 24.4 | | 22.6 | | 20.5 | | 20.3 | |
| LPF | | | 68 | 52.4 | | 50.8 | | 54.8 | | 46.4 | |
| MAVE (uniform) | x = number of samples | | 116 | 16.9 | + (x * 0.1) | 15.7 | + (x * 0.2) | 11.3 | + (x * 0.3) | 8.7 | + (x * 0.1) |
| MAVE (weighted) | x = number of samples | | 116 | 16.9 | + (x * 0.5) | 16.9 | + (x * 0.3) | 11.0 | + (x * 0.4) | 6.4 | + (x * 0.4) |
| MAXC | | | | 8.8 | | 6.8 | | 5.4 | | 3.8 | |
| MEQ | | | | 0.8 | | 1.0 | | 0.9 | | 1.0 | |
| MINC | | | 68 | 9.2 | | 5.4 | | 8.6 | | 5.3 | |
| MOD | | | | 12.4 | | 11.6 | | 10.6 | | 10.7 | |
| MSTD | x = number of samples | | 92 | 29.9 | + (x * 0.7) | 32.2 | + (x * 0.5) | 23.6 | + (x * 0.6) | 23.0 | + (x * 0.5) |
| MUL | | | | 2.2 | | 2.1 | | 2.0 | | 2.0 | |
| MUX | | | 68 | 6.0 | | 6.4 | | 8.0 | | 4.5 | |
| MVMT | | | 68 | 3.4 | | 3.3 | | 3.1 | | 3.1 | |
| NEG | | | | 0.7 | | 0.9 | | 0.7 | | 0.8 | |
| NEQ | | | | 0.8 | | 1.0 | | 0.8 | | 0.9 | |
| NOT | | | | 0.5 | | 0.6 | | 0.6 | | 0.7 | |
| NTCH | | | | 57.0 | | 55.5 | | 57.3 | | 54.6 | |
| OR | | | | 0.6 | | 0.6 | | 0.6 | | 0.6 | |
| ORefBOOL | | | | 0.10 | | 0.09 | | 0.09 | | 0.08 | |
| ORefDINT | | | | 0.10 | | 0.09 | | 0.08 | | 0.08 | |
| ORefREAL | | | | 0.10 | | 0.08 | | 0.08 | | 0.08 | |
| OSFI | | | 68 | 1.3 | | 1.9 | | 2.1 | | 1.7 | |
| OSRI | | | 68 | 1.2 | | 1.4 | | 2.1 | | 1.7 | |

| Function block Element | Notes | Memory (bytes) | | Execution time (μ s) | | | | | | | |
|------------------------|-----------------------|----------------|------------|---------------------------|----------------------|----------|----------------------|-------|-------------|-------|-------------|
| | | 1756-L64 | All Others | 1769-L23E | 1769-L31, L-32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | | | | |
| PI | | | | 49.1 | | 45.0 | | 50.3 | | 45.2 | |
| PIDE | | | 68 | 145.8 | | 144.2 | | 150.6 | | 141.4 | |
| PMUL | | | 68 | 11.9 | | 8.1 | | 7.7 | | 8.3 | |
| POSP | | | 68 | 40.2 | | 44.0 | | 40.0 | | 39.9 | |
| RAD | | | | 2.2 | | 2.1 | | 1.9 | | 2.0 | |
| RESD | | | 68 | 3.2 | | 3.2 | | 3.1 | | 2.7 | |
| RLIM | | | 68 | 39.6 | | 34.1 | | 37.0 | | 35.9 | |
| RMPS | | | 144 | 51.0 | | 49.9 | | 51.1 | | 45.8 | |
| RTOR | | | 68 | 18.7 | | 23.1 | | 21.5 | | 23.2 | |
| SCL | | | 68 | 15.7 | | 15.9 | | 14.4 | | 13.4 | |
| SCRV | | | 68 | 56.3 | | 54.4 | | 60.9 | | 57.3 | |
| SEL | | | 68 | 3.9 | | 3.8 | | 4.6 | | 3.1 | |
| SETD | | | 68 | 2.4 | | 2.4 | | 2.4 | | 3.2 | |
| SIN | | | | 31.1 | | 29.4 | | 26.1 | | 26.3 | |
| SNEG | | | 68 | 3.6 | | 3.3 | | 4.3 | | 4.3 | |
| SOC | | | 68 | 58.1 | | 53.1 | | 59.6 | | 51.3 | |
| SQR | | | | 11.5 | | 10.8 | | 9.8 | | 9.8 | |
| SRTP | | | 68 | 40.0 | | 38.9 | | 37.6 | | 35.7 | |
| SSUM | x = number of samples | | 68 | 6.1 | + (x * .5) | 5.9 | + (x * 0.6) | 8.6 | + (x * 0.4) | 4.8 | + (x * 0.2) |
| SUB | | | | 2.3 | | 2.1 | | 1.8 | | 2.0 | |
| TAN | | | | 35.9 | | 33.4 | | 30.0 | | 29.8 | |
| TOD | | | | 5.1 | | 4.9 | | 4.5 | | 4.5 | |
| TOFR | | | 68 | 19.2 | | 21.9 | | 21.5 | | 21.0 | |
| TONR | | | 68 | 18.4 | | 21.6 | | 22.6 | | 19.7 | |
| TOT | | | 68 | 49.2 | | 48.1 | | 40.5 | | 42.6 | |
| TRN | | | | 4.6 | | 4.6 | | 4.3 | | 4.1 | |
| UPDN | | | 68 | 5.2 | | 5.5 | | 5.0 | | 3.7 | |
| WireBOOL-to-BOOL | | | | 0.22 | | 0.20 | | 0.18 | | 0.18 | |
| WireDINT-to-DINT | | | | 0.25 | | 0.23 | | 0.21 | | 0.21 | |
| WireDINT-to-REAL | | | | 3.46 | | 3.22 | | 2.90 | | 2.89 | |
| WireREAL-to-DINT | | | | 4.80 | | 4.47 | | 4.02 | | 4.01 | |
| WireREAL-to-REAL | | | | 0.46 | | 0.43 | | 0.38 | | 0.39 | |
| XOR | | | | 0.5 | | 0.6 | | 0.6 | | 0.6 | |
| XPY | | | | 52.6 | | 49.1 | | 43.6 | | 43.2 | |

| Function block Element | Notes | Memory (bytes) | | | | | |
|------------------------|-------|----------------|------------|----------------|----------------|--------|--|
| | | 1756-L64 | All Others | 1756-L64, -L65 | DriveLogix5730 | | |
| ABS | | | | 1.1 | | 0.9 | |
| ACS | | | | 32.2 | | 34.1 | |
| ADD | | | | 2.3 | | 2.0 | |
| ALM | | | 68 | 30.0 | | 18.6 | |
| AND | | | | 1.0 | | 0.6 | |
| ASN | | | | 30.8 | | 31.7 | |
| ATN | | | | 22.3 | | 22.9 | |
| BAND | | | 68 | 2.6 | | 2.7 | |
| BNOT | | | 68 | 4.0 | | 2.1 | |
| BOR | | | 68 | 2.9 | | 2.5 | |
| BTDT | | | | 3.8 | | 3.6 | |
| BXOR | | | 68 | 2.5 | | 2.2 | |
| COS | | | | 26.6 | | 27.2 | |
| CTUD | | | 68 | 10.2 | | 10.2 | |
| D2SD | | | 68 | 25.2 | | 19.3 | |
| D3SD | | | | 34.7 | | 21.3 | |
| DEDT | | | 152 | 42.0 | | 36.0 | |
| DEG | | | | 2.2 | | 2.0 | |
| DERV | | | 68 | 38.2 | | 36.6 | |
| DFF | | | 68 | 3.0 | | 2.9 | |
| DIV | | | | 2.7 | | 2.4 | |
| EQU | | | | 1.2 | | 0.9 | |
| ESEL-Average Sel. | | | 68 | 12.4 | | 15.6 | |
| ESEL-High Select | | | 68 | 12.3 | | 15.5 | |
| ESEL-Low Select | | | 68 | 11.9 | | 15.7 | |
| ESEL-Manual | | | 68 | 9.1 | | 11.7 | |
| ESEL-Median Sel. | | | 68 | 17.5 | | 22.1 | |
| FGEN | | | 160 | 26.8 | | 18.7 | |
| FRD | | | | 3.8 | | 3.6 | |
| GEQ | | | | 1.3 | | 1.0 | |
| GRT | | | | 1.3 | | 1.0 | |
| HLL | | | 68 | 5.8 | | 4.2 | |
| HPF | | | 68 | 56.2 | | 54.4 | |
| ImmDINT | | | | < 0.01 | | < 0.01 | |
| ImmREAL | | | | < 0.01 | | < 0.01 | |

| Function block Element | Notes | Memory (bytes) | | | | | |
|------------------------|-----------------------|----------------|------------|----------------|----------------|------|-------------|
| | | 1756-L64 | All Others | 1756-L64, -L65 | DriveLogix5730 | | |
| INTG | | | 68 | 31.8 | | 33.8 | |
| IRefBOOL | | | | 0.41 | | 0.26 | |
| IRefDINT | | | | 0.39 | | 0.29 | |
| IRefREAL | | | | 0.57 | | 0.48 | |
| JKFF | | | 68 | 3.7 | | 2.9 | |
| LDL2 | | | 68 | 58.8 | | 50.4 | |
| LDLG | | | 68 | 49.6 | | 45.9 | |
| LEQ | | | | 1.3 | | 1.0 | |
| LES | | | | 1.3 | | 1.0 | |
| LIM | | | | 2.4 | | 2.1 | |
| LN | | | | 20.6 | | 21.1 | |
| LOG | | | | 20.6 | | 21.0 | |
| LPF | | | 68 | 53.2 | | 48.9 | |
| MAVE (uniform) | x = number of samples | | 116 | 12.1 | + (x * 0.1) | 14.5 | + (x * 0.1) |
| MAVE (weighted) | x = number of samples | | 116 | 10.1 | + (x * 0.5) | 10.1 | + (x * 0.5) |
| MAXC | | | | 5.8 | | 4.8 | |
| MEQ | | | | 1.4 | | 1.0 | |
| MINC | | | 68 | 7.9 | | 4.8 | |
| MOD | | | | 10.8 | | 10.9 | |
| MSTD | x = number of samples | | 92 | 30.8 | + (x * 0.3) | 28.7 | + (x * 0.6) |
| MUL | | | | 2.4 | | 2.0 | |
| MUX | | | 68 | 6.1 | | 7.3 | |
| MVMT | | | 68 | 3.5 | | 3.2 | |
| NEG | | | | 1.2 | | 0.9 | |
| NEQ | | | | 1.2 | | 0.9 | |
| NOT | | | | 0.9 | | 0.6 | |
| NTCH | | | | 62.3 | | 49.9 | |
| OR | | | | 1.1 | | 0.6 | |
| ORefBOOL | | | | 0.07 | | 0.08 | |
| ORefDINT | | | | 0.08 | | 0.08 | |
| ORefREAL | | | | 0.08 | | 0.08 | |
| OSFI | | | 68 | 1.8 | | 2.5 | |
| OSRI | | | 68 | 1.8 | | 2.6 | |

| Function block Element | Notes | Memory (bytes) | | | | | |
|------------------------|-----------------------|----------------|------------|----------------|----------------|-------|-------------|
| | | 1756-L64 | All Others | 1756-L64, -L65 | DriveLogix5730 | | |
| PI | | | | 47.5 | | 48.4 | |
| PIDE | | | 68 | 143.5 | | 141.7 | |
| PMUL | | | 68 | 8.5 | | 7.7 | |
| POSP | | | 68 | 38.4 | | 38.2 | |
| RAD | | | | 2.2 | | 2.2 | |
| RESD | | | 68 | 3.6 | | 2.6 | |
| RLIM | | | 68 | 32.7 | | 37.7 | |
| RMPS | | | 144 | 52.8 | | 41.2 | |
| RTOR | | | 68 | 23.5 | | 21.9 | |
| SCL | | | 68 | 14.7 | | 9.2 | |
| SCRV | | | 68 | 61.2 | | 56.4 | |
| SEL | | | 68 | 3.1 | | 3.8 | |
| SETD | | | 68 | 3.2 | | 2.6 | |
| SIN | | | | 26.5 | | 27.2 | |
| SNEG | | | 68 | 4.7 | | 4.3 | |
| SOC | | | 68 | 55.2 | | 56.5 | |
| SQR | | | | 10.1 | | 10.3 | |
| SRTP | | | 68 | 43.7 | | 31.2 | |
| SSUM | x = number of samples | | 68 | 4.9 | + (x * 0.2) | 7.1 | + (x * 0.0) |
| SUB | | | | 2.3 | | 2.0 | |
| TAN | | | | 30.8 | | 31.3 | |
| TOD | | | | 4.8 | | 4.7 | |
| TOFR | | | 68 | 24.1 | | 20.1 | |
| TONR | | | 68 | 23.4 | | 21.5 | |
| TOT | | | 68 | 47.4 | | 38.8 | |
| TRN | | | | 4.4 | | 4.3 | |
| UPDN | | | 68 | 4.3 | | 4.3 | |
| WireBOOL-to-BOOL | | | | 0.33 | | 0.18 | |
| WireDINT-to-DINT | | | | 0.31 | | 0.21 | |
| WireDINT-to-REAL | | | | 3.00 | | 2.96 | |
| WireREAL-to-DINT | | | | 4.11 | | 4.15 | |
| WireREAL-to-REAL | | | | 0.49 | | 0.39 | |
| XOR | | | | 1.0 | | 0.7 | |
| XPY | | | | 43.7 | | 45.1 | |

Currently, only the memory use is available for SFC elements.

| SFC Element | Memory (bytes) |
|------------------------------|-----------------------|
| chart | 1516 |
| step | 132 |
| transition | 404 |
| step and transition pair | 828 |
| action | 264 |
| additional action for a step | 196 |
| simultaneous branch | 2968 |
| stop | 236 |

| Structured Text Element | Example | Type | Data Type | Execution Time (µs) | | | | | |
|-------------------------|---|------|------------------|--|----------------------|----------|----------------------|----------------|----------------|
| | | | | 1769-L23E | 1769-L31, -L32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | 1756-L64, -L65 | DriveLogix5730 |
| assignment, simple | A := B; | | DINT_A := DINT_B | 0.27 | 0.29 | 0.26 | 0.26 | 0.36 | 0.27 |
| | | | DINT_A := INT_B | 0.81 | 0.89 | 0.79 | 0.79 | 0.85 | 0.81 |
| | | | DINT_A := REAL_B | 4.20 | 4.51 | 4.05 | 4.05 | 4.15 | 4.14 |
| | | | DINT_A := SINT_B | 0.74 | 0.79 | 0.72 | 0.72 | 0.80 | 0.73 |
| | | | INT_A := DINT_B | 2.71 | 2.88 | 2.62 | 2.61 | 2.72 | 2.67 |
| | | | INT_A := INT_B | 3.19 | 3.39 | 3.08 | 3.07 | 3.13 | 3.14 |
| | | | INT_A := REAL_B | 4.88 | 5.25 | 4.72 | 4.72 | 4.82 | 4.82 |
| | | | REAL_A := DINT_B | 3.06 | 3.26 | 2.95 | 2.95 | 3.05 | 3.02 |
| | | | REAL_A := INT_B | 1.37 | 1.47 | 1.33 | 1.33 | 1.38 | 1.36 |
| | | | REAL_A := REAL_B | 0.45 | 0.48 | 0.44 | 0.44 | 0.54 | 0.45 |
| | | | REAL_A := SINT_B | 1.29 | 1.38 | 1.26 | 1.26 | 1.33 | 1.29 |
| | | | SINT_A := DINT_B | 2.68 | 2.86 | 2.59 | 2.59 | 2.69 | 2.64 |
| | | | SINT_A := REAL_B | 4.83 | 5.17 | 4.67 | 4.67 | 4.77 | 4.76 |
| SINT_A := SINT_B | 3.08 | 3.30 | 2.98 | 2.97 | 3.05 | 3.02 | | | |
| assignment, complex | A := -B; A := B + C; A := sin(B); | | | Use the execution time for the ladder logic Compute (CPT) instruction plus time for each operator and function in the expression. For each operator and function, use the value for the corresponding instruction. For example, for Tag_A := Tag_B + Tag_C, use the time for the CPT instruction plus the time for the ADD instruction. | | | | | |
| comparison, simple | A > B A = B | | = DINT | 0.06 | 0.06 | 0.05 | 0.05 | 0.20 | 0.05 |
| | | | = REAL | 0.06 | 0.06 | 0.05 | 0.05 | 0.20 | 0.06 |
| | | | <> DINT | 0.06 | 0.06 | 0.05 | 0.05 | 0.21 | 0.05 |
| | | | <> REAL | 0.07 | 0.06 | 0.05 | 0.05 | 0.20 | 0.06 |
| | | | > DINT | 0.06 | 0.06 | 0.05 | 0.05 | 0.21 | 0.05 |
| | | | > REAL | 0.19 | 0.17 | 0.15 | 0.15 | 0.31 | 0.16 |
| | | | >= DINT | 0.05 | 0.06 | 0.05 | 0.05 | 0.21 | 0.05 |
| | | | >= REAL | 0.19 | 0.17 | 0.16 | 0.15 | 0.31 | 0.16 |
| | | | < DINT | 0.06 | 0.06 | 0.05 | 0.05 | 0.21 | 0.05 |
| | | | < REAL | 0.18 | 0.18 | 0.16 | 0.15 | 0.31 | 0.16 |
| | | | <= DINT | 0.06 | 0.06 | 0.05 | 0.06 | 0.21 | 0.05 |
| | | | <= REAL | 0.18 | 0.18 | 0.16 | 0.15 | 0.31 | 0.15 |
| comparison, complex | A > -B A > (B + C) A > sin(B) | | | Use the execution time for the ladder logic Compare (CMP) instruction plus time for each operator and function in the expression For each operator and function, use the value for the corresponding instruction. For example, for Tag_A > (Tag_B + Tag_C), use the time for the CMP instruction plus the time for the GRT instruction and the ADD instruction. | | | | | |

| Structured Text Element | Example | Type | Data Type | Execution Time (µs) | | | | | |
|-------------------------|---------|------|-----------|---------------------|----------------------|----------|----------------------|----------------|----------------|
| | | | | 1769-L23E | 1769-L31, -L32, -L35 | 1768-L43 | 1756-L61, -L62, -L63 | 1756-L64, -L65 | DriveLogix5730 |
| instruction | | ABL | n/a | 32.45 | 25.17 | 22.93 | 13.21 | 18.84 | 21.06 |
| | | ABS | DINT | 2.37 | 2.22 | 2.00 | 2.00 | 2.10 | 2.04 |
| | | ABS | REAL | 2.76 | 2.55 | 2.31 | 2.31 | 2.41 | 2.36 |
| | | ACB | n/a | 19.78 | 24.96 | 19.90 | 14.55 | 16.41 | 15.30 |
| | | ACL | n/a | 77.24 | 76.45 | 61.78 | 63.80 | 65.84 | 70.10 |
| | | ACS | REAL | 44.46 | 39.62 | 34.33 | 33.48 | 34.99 | 37.32 |
| | | ADD | DINT | 2.35 | 2.20 | 1.98 | 1.99 | 2.16 | 2.02 |
| | | ADD | REAL | 4.07 | 3.77 | 3.40 | 3.40 | 3.57 | 3.46 |
| | | AHL | n/a | 14.07 | 17.98 | 16.30 | 11.89 | 13.81 | 16.04 |
| | | AND | DINT | 2.35 | 2.20 | 1.98 | 1.98 | 2.16 | 2.02 |
| | | ARD | n/a | 70.11 | 74.07 | 73.95 | 55.06 | 54.88 | 64.64 |
| | | ARL | n/a | 69.62 | 73.59 | 64.17 | 58.75 | 54.29 | 60.22 |
| | | ASN | REAL | 42.82 | 36.43 | 32.39 | 32.01 | 32.24 | 33.95 |
| | | ATN | REAL | 27.96 | 26.59 | 23.21 | 23.40 | 23.30 | 24.02 |
| | | AWA | n/a | 76.17 | 73.17 | 63.08 | 52.87 | 51.28 | 58.69 |
| | | AWT | n/a | 66.99 | 67.17 | 58.43 | 51.27 | 54.57 | 56.19 |
| | | CLR | DINT | 0.30 | 0.29 | 0.26 | 0.26 | 0.28 | 0.27 |
| | | CLR | REAL | 3.18 | 2.96 | 2.67 | 2.67 | 2.70 | 2.72 |
| | | COS | REAL | 34.93 | 31.39 | 27.65 | 27.35 | 27.68 | 29.47 |
| | | DEG | REAL | 3.98 | 3.91 | 3.44 | 3.45 | 3.56 | 3.61 |
| | | DIV | DINT | 8.12 | 7.62 | 6.83 | 6.82 | 7.00 | 7.00 |
| | | DIV | REAL | 4.56 | 4.25 | 3.81 | 3.80 | 3.99 | 3.91 |
| | | LN | REAL | 26.18 | 24.44 | 22.01 | 21.69 | 21.99 | 22.49 |
| | | LOG | REAL | 26.17 | 24.51 | 21.93 | 21.69 | 22.02 | 22.52 |
| | | MOD | DINT | 11.73 | 11.40 | 9.68 | 9.64 | 9.82 | 10.01 |
| | | MOD | REAL | 14.49 | 13.48 | 11.96 | 11.95 | 12.15 | 12.38 |
| | | MUL | DINT | 7.52 | 7.03 | 6.27 | 6.26 | 6.43 | 6.44 |
| | | MUL | REAL | 4.07 | 3.81 | 3.42 | 3.42 | 3.60 | 3.49 |
| | | NEG | DINT | 2.35 | 2.21 | 1.98 | 1.98 | 2.09 | 2.02 |
| | | NEG | REAL | 2.75 | 2.58 | 2.31 | 2.31 | 2.42 | 2.37 |
| | | NOT | DINT | 2.32 | 2.18 | 1.96 | 1.95 | 2.06 | 2.01 |
| | | OR | DINT | 2.35 | 2.20 | 1.98 | 1.98 | 2.16 | 2.02 |
| | RAD | REAL | 3.99 | 3.89 | 3.45 | 3.45 | 3.54 | 3.50 | |
| | SIN | REAL | 33.34 | 31.49 | 27.70 | 27.40 | 27.75 | 28.67 | |

| Motion State or Action (Δ = per axis) | Notes | Average Execution | | |
|---|--|----------------------|----------------|--|
| | | 1756-L61, -L62, -L63 | 1756-L64, -L65 | 1768-L43 |
| Motion Task Overhead | | 174 | 182 | 178 |
| Servo Axis Δ | | 42 | 41 | |
| Virtual Axis Δ | | | | |
| Consumed Axis Δ | These values are worst case (producer/consumer update ratio = 2/3). To reduce the time by 25%, use a consumer coarse update period that is an integer multiple of the producer coarse update period (e.g., 2/4). | 41 | 40 | N/A. The 1768-L43 controller cannot consume an axis. |
| Per Coordinate System | | 7 | 7 | 7 |
| Group Auto Tag Update Δ ** (Servo/Virtual/Consumer) | servo | 7 | 7 | 7 |
| | virtual | 7 | 7 | 7 |
| Coordinate System Auto Tag Update | | 7 | 7 | 8 |
| Servo On Δ | | 1 | 1 | 2 |
| Trap Move Δ | | 12 | 11 | 12 |
| S-Curve Move Δ | | 14 | 12 | 12 |
| Trap Jog Δ | | 7 | 7 | 6 |
| S-Curve Jog Δ | | 14 | 7 | 14 |
| Gearing (Actual) Δ | | 13 | 12 | 13 |
| Clutch Δ | | 2 | 2 | 1 |
| Clutch Δ | | 2 | 3 | 2 |
| Position Camming (Actual, linear) Δ | | 20 | 17 | 20 |
| Position Camming (Actual, cubic) Δ | | 20 | 19 | 20 |
| Position Camming (Command, linear) Δ | | 18 | 16 | 18 |
| Position Camming (Command, cubic) Δ | | 18 | 18 | 19 |
| Time Camming (linear) Δ | | 18 | 18 | 17 |
| Time Camming (cubic) Δ | | 18 | 19 | 18 |
| MCCP Linear | | 10 | 10 | 10 |
| MCCP Cubic | | 13 | 13 | 13 |

Array Subscripts

When an array uses a tag for one of its subscripts (e.g., Array_A[Tag_B]), additional memory and execution time is required, depending on the number of dimensions in the array. Memory use and execution time for an instruction increases for each parameter that references an array.

| Data Type | Number of Dimensions | Memory (bytes) | Execution time (µs) |
|---|----------------------|----------------|---------------------|
| | | | 1756-L6x |
| BOOL, SINT, INT, DINT, REAL | 1 | 84 | 0.69 |
| | 2 | 152 | 9.2 |
| | 3 | 152 | 11.7 |
| Pre-Defined Structure (e.g., TIMER, COUNTER, PID) | 1 | | 1.0 |
| | 2 | | 9.5 |
| | 3 | | 12.0 |
| User-Defined Data Type | 1 | | 1.3 |
| | 2 | | 9.5 |
| | 3 | | 12.1 |

| Example | Source | Destination | Memory (bytes) |
|---------|--------|-------------|----------------|
| MOV | DINT | DINT[DINT] | 108 |

The controller uses a 32-bit index for all arrays. If you use a tag other than DINT to reference a position in an array, add memory and time for the data conversion as well as memory and time for using a tag as an index.

| Example | Source | Destination | Memory (bytes) |
|---------|--------|---------------|----------------|
| MOV | DINT | DINT[INT] | 168 |
| MOV | DINT | DINT[INT,0,0] | 236 |

Changing the source and destination data type in the above examples increases the instruction's memory and execution time.

| Example | Source | Destination | Memory (bytes) |
|---------|--------|---------------|----------------|
| MOV | DINT | INT[INT] | 200 |
| MOV | SINT | INT[INT] | 240 |
| MOV | DINT | SINT[INT,0,0} | 268 |
| MOV | INT | SINT[INT,0,0] | 320 |

If you use an expression in the index, additional memory and time is used for the operators. The additional memory and time depends on the type of operator.

| Example | Source | Destination | Memory (bytes) |
|---------|--------|-------------------|----------------|
| MOV | DINT | DINT[DINT + DINT] | 132 |

If you use multiple arrays in a instruction, add the appropriate memory and time for each array reference.

| Example | Source | Destination | Memory (bytes) |
|---------|------------------------|------------------------|----------------|
| MOV | DINT[DINT] | DINT[DINT] | 184 |
| MOV | DINT[DINT, DINT, DINT] | DINT[DINT, DINT, DINT} | 320 |

Conversions

| Ladder Instruction | Data Type | Notes | Execution Time if True (µs) | | | | | | | | | | |
|--------------------|-----------|-------|-----------------------------|--|--------------------|--|----------------|--|----------|--|----------------------|--|----------------|
| | | | 1769-L23 | | 1756-L61, -62. -63 | | 1756-L64, -L65 | | 1768-L43 | | 1769-L31, -L32, -L35 | | DriveLogix5730 |
| Conv | SINT-DINT | | 0.53 | | 0.44 | | 0.41 | | 0.44 | | 0.49 | | 0.45 |
| Conv | INT-DINT | | 0.62 | | 0.52 | | 0.46 | | 0.52 | | 0.58 | | 0.53 |
| Conv | DINT-SINT | | 2.76 | | 2.33 | | 2.33 | | 2.33 | | 2.59 | | 2.37 |
| Conv | DINT-INT | | 2.80 | | 2.35 | | 2.35 | | 2.35 | | 2.61 | | 2.39 |
| Conv | SINT-REAL | | 0.95 | | 0.80 | | 0.78 | | 0.80 | | 0.89 | | 0.82 |
| Conv | INT-REAL | | 1.05 | | 0.87 | | 0.83 | | 0.87 | | 0.97 | | 0.89 |
| Conv | DINT-REAL | | 2.99 | | 2.51 | | 2.51 | | 2.51 | | 2.78 | | 2.56 |
| Conv | REAL-SINT | | 5.09 | | 4.24 | | 4.25 | | 4.24 | | 4.73 | | 4.34 |
| Conv | REAL-INT | | 5.14 | | 4.29 | | 4.29 | | 4.30 | | 4.79 | | 4.40 |
| Conv | REAL-DINT | | 4.33 | | 3.62 | | 3.62 | | 3.62 | | 4.04 | | 3.69 |