

COMPUTING FUNCTION

Operation Instruction List (Table 2)

DR: Data register (0-99)
CY: Carry

Note: (Operand) stands for data designated by operand.

Instruction Type	Computing Instruction	Function	Objects That Can Be Designated by Operand	Forbidden Designation (Results in error 80)
		NOP	—	
Binary conversion BCD → BIN		Converts BCD value of DR 0 into binary and sets the result to DR 0.	—	
BCD conversion BIN → BCD		Converts binary value of DR 0 into BCD and sets the result to DR 0.	—	
4-digit comparison		$(DR\ 0) \begin{cases} > \\ = \\ < \end{cases} (Operand)$ Sets the result at internal relay: $\begin{cases} > \rightarrow 710 \\ = \rightarrow 711 \\ < \rightarrow 712 \end{cases}$	Timer, counter, data register, constant	
Addition (+)		$(DR\ 0) + (Operand) + (CY) \rightarrow (DR\ 0), (CY)$	Timer, counter, data register, constant	
Subtraction (-)		$(DR\ 0) - (Operand) - (CY) \rightarrow (DR\ 0), (CY)$	Timer, counter data register, constant	
Multiplication (x)		$(DR\ 0) \times (Operand) \rightarrow (DR\ 1), (DR\ 0)$ (Upper & lower 4 digits)	Timer, counter, data register, constant	
Division (\div)		$(DR\ 0) \div (Operand) \rightarrow (DR\ 1), (DR\ 0)$ (Remainder - Quotient)	Timer, counter, data register, constant	
Data register data shift		$\rightarrow (DR\ m) \rightarrow (DR\ m+1) \rightarrow \dots \rightarrow (DR\ n)$ Designated number only	Data register	Anything other than data register
BCD digit left shift		Left shift of (DR1) and (DR0) by the number of digits (operand) (Lower digits are set to 0.)	Data register, constant	
Data load (16-bit)		$(DR\ 0) \leftarrow (Operand)$	I/O, internal relay, timer, counter, data register, constant	
Data load (8-bit)		$(DR\ 0) \leftarrow (Operand)$ Upper 8 bits of DR1 are set to 0.	I/O, internal relay	
Data load (Indirect)		$(DR\ 0) \leftarrow (Operand + (DR\ 1))$	Timer, counter data register	Anything other than those listed at left
Data load (16 bit)		$(DR\ 1) \leftarrow (Operand)$	I/O, internal relay, timer, counter, data register, constant	
Data load (8-bit)		$(DR\ 1) \leftarrow (Operand)$ Upper 8 bits of DR1 are set to 0.	I/O, internal relay	
Data increment		$(Operand) \leftarrow (Operand) + 1$	Data register	Anything other than those listed at left
Data decrement		$(Operand) \leftarrow (Operand) - 1$	Data register	Anything other than those listed at left
Data store (16-bit)		$(DR\ 0) \rightarrow (Operand)$	Output, internal relay, timer, counter, data register	Constant
Data store (8-bit)		$(DR\ 0) \rightarrow (Operand)$ 8-bit	Output, internal relay	Constant
Data store (Indirect)		$(DR\ 0) \rightarrow (Operand + (DR\ 1))$	Counter, timer, data register	Anything other than those listed at left
Data store (16-bit)		$(DR\ 1) \rightarrow (Operand)$	Output, internal relay, timer, counter, data register	Constant
Data store (8-bit)		$(DR\ 1) \rightarrow (Operand)$ 8-bit	Output, internal relay	Constant
Data display (Dynamic)		Converts (DR0) into BCD and gives display output after every scan.	Output	Anything other than output

Note: As DR0 and 1 are used for computing operation, do not use them for data store in user's programs.