

Table 12 4-Bit Operation, 8-Digit × 1-Line Display Example with Internal Reset

Step No.	Instruction						Display	Operation
	RS	R/W	DB7	DB6	DB5	DB4		
1	Power supply on (the HD44780U is initialized by the internal reset circuit)						<input type="text"/>	Initialized. No display.
2	Function set 0 0 0 0 1 0						<input type="text"/>	Sets to 4-bit operation. In this case, operation is handled as 8 bits by initialization, and only this instruction completes with one write.
3	Function set 0 0 0 0 1 0 0 0 0 0 * *						<input type="text"/>	Sets 4-bit operation and selects 1-line display and 5 × 8 dot character font. 4-bit operation starts from this step and resetting is necessary. (Number of display lines and character fonts cannot be changed after step #3.)
4	Display on/off control 0 0 0 0 0 0 0 0 1 1 1 0						<input type="text"/>	Turns on display and cursor. Entire display is in space mode because of initialization.
5	Entry mode set 0 0 0 0 0 0 0 0 0 1 1 0						<input type="text"/>	Sets mode to increment the address by one and to shift the cursor to the right at the time of write to the DD/CGRAM. Display is not shifted.
6	Write data to CGRAM/DDRAM 1 0 0 1 0 0 1 0 1 0 0 0						<input type="text"/>	Writes H. The cursor is incremented by one and shifts to the right.

Note: The control is the same as for 8-bit operation beyond step #6.