

Instruction											Description	Time Execution
	RS	R/W	B7	B6	B5	B4	B3	B2	B1	B0		
Clear display	0	0	0	0	0	0	0	0	0	1	Clears the screen content and then the cursor returns to the position Home	1.52 ms
Cursor Home	0	0	0	0	0	0	0	0	1	*	Returns the cursor to the "Home" position. Also returns the view area to the initial position. The content of the DDRAM remains intact	1.52 ms
Entry Mode Set	0	0	0	0	0	0	0	1	I/D	S	Increase / Decrease direction (I / D); Enable screen shift (S). These operations are performed when reading or writing data	37 μ s
Display on/of control	0	0	0	0	0	0	1	D	C	B	Turns the display on or off (DE), Cursor on / off (C), cursor blink (B).	37 μ s
Cursor/display Shift	0	0	0	0	0	1	S/C	R/L	*	*	Select between screen or cursor scroll (S / C), select scroll direction (R / L). The content of the DDRAM remains intact.	37 μ s
Function set	0	0	0	0	1	DL	N	F	*	*	Configure the bus width (4 or 8 bits) (DL), Number of display lines (N), and type of font (F).	37 μ s
Set CGRAM address	0	0	0	1	CGRAM address						Write the CGRAM address. The data to be stored in CGRAM can be sent after this instruction	37 μ s

Set DDRAM address	0	0	1	DDRAM address	Enter the SDRAM address. The data to be stored in DDRAM can be sent after this instruction	37 μ s
Read busy flag & address counter	0	1	BF	CGRAM/DDRAM address	Read "Busy Flag" indicating if the controller is performing an internal operation or is ready to accept data / commands. Read the CGRAM or DDRAM address (depending on the previous instruction).	0 μ s
Write CGRAM or DDRAM	1	0		Write Data	Write data to CGRAM or DDRAM memories	37 μ s
Read from CG/DDRAM	1	1		Read Data	Lee datos desde las memorias CGRAM o DDRAM.	37 μ s

I / R - 0 = decrease the address counter, 1 = increase the address counter.

S - 0 = Without display shift, 1 = With display shift.

D - 0 = Display Off, 1 = Display On.

C - 0 = Cursor Off, 1 = Cursor On.

B - 0 = Cursor Blink Off, 1 = Cursor Blink On.

S / C - 0 = Move Cursor, 1 = Screen Scroll.

R / L - 0 = Move / Run Left, 1 = Move / Run Right.

DL - 0 = 4-bit interface, 1 = 8-bit interface.

N - 0 = 1 line, 1 = 2 lines.

F - 0 = 5 \times 8 points, 1 = 5 \times 10 points.

BF - 0 = can accept instruction, 1 = internal operation in progress.

ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol
0 0 NUL	16 10 DLE	32 20 (space)	48 30 0
1 1 SOH	17 11 DC1	33 21 !	49 31 1
2 2 STX	18 12 DC2	34 22 "	50 32 2
3 3 ETX	19 13 DC3	35 23 #	51 33 3
4 4 EOT	20 14 DC4	36 24 \$	52 34 4
5 5 ENQ	21 15 NAK	37 25 %	53 35 5
6 6 ACK	22 16 SYN	38 26 &	54 36 6
7 7 BEL	23 17 ETB	39 27 '	55 37 7
8 8 BS	24 18 CAN	40 28 (56 38 8
9 9 TAB	25 19 EM	41 29)	57 39 9
10 A LF	26 1A SUB	42 2A *	58 3A :
11 B VT	27 1B ESC	43 2B +	59 3B ;
12 C FF	28 1C FS	44 2C ,	60 3C <
13 D CR	29 1D GS	45 2D -	61 3D =
14 E SO	30 1E RS	46 2E .	62 3E >
15 F SI	31 1F US	47 2F /	63 3F ?
ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol	ASCII Hex Symbol
64 40 @	80 50 P	96 60 `	112 70 p
65 41 A	81 51 Q	97 61 a	113 71 q
66 42 B	82 52 R	98 62 b	114 72 r
67 43 C	83 53 S	99 63 c	115 73 s
68 44 D	84 54 T	100 64 d	116 74 t
69 45 E	85 55 U	101 65 e	117 75 u
70 46 F	86 56 V	102 66 f	118 76 v
71 47 G	87 57 W	103 67 g	119 77 w
72 48 H	88 58 X	104 68 h	120 78 x
73 49 I	89 59 Y	105 69 i	121 79 y
74 4A J	90 5A Z	106 6A j	122 7A z
75 4B K	91 5B [107 6B k	123 7B {
76 4C L	92 5C \	108 6C l	124 7C
77 4D M	93 5D]	109 6D m	125 7D }
78 4E N	94 5E ^	110 6E n	126 7E ~
79 4F O	95 5F _	111 6F o	127 7F