

20 X 4 LCD DISPLAY

PINOUT

NO CONNECTION	☒☒	V-BIAS
NO CONNECTION	☒☒	CONTRAST
READ/WRITE	☒☒	KEY (NO PIN)
REGISTER SELECT	☒☒	GROUND
ENABLE	☒☒	GROUND
DADA BUS 0	☒☒	GROUND
DATA BUS 1	☒☒	GROUND
DATA BUS 2	☒☒	GROUND
DATA BUS 3	☒☒	GROUND
DATA BUS 4	☒☒	GROUND
DATA BUS 5	☒☒	VCC (+5V)
DATA BUS 6	☒☒	VCC (+5V)
DATA BUS 7	☒☒	NO CONNECTION

READ/WRITE	INPUT TO LCD
REGISTER SELECT	INPUT TO LCD
ENABLE	INPUT TO LCD
DATA BUS	INPUT/OUTPUT TO/FROM LCD
VCC	POWER
GROUND	POWER GROUND

Hackers' Notebook
hacker.instanet.net

Granada Hills, CA 91367

INSTRUCTION SET

INSTRUCTION	RS	R/W	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0	DESCRIPTION
Clear Display	0	0	0	0	0	0	0	0	0	1	Clear Display and set DD Ram Counter = 0
Return Home	0	0	0	0	0	0	0	0	1	*	Set DD Ram Counter=0, Unshift if shifted
Entry Mode	0	0	0	0	0	0	0	1	I/D	S	Set Shift Dir, Cursor Movement
Display Control	0	0	0	0	0	0	1	D	C	B	Display, Cursor, Blink ON/OFF
Shift Disp/cursor	0	0	0	0	0	1	S/C	R/L	*	*	Move Cursor or Display one position
Function Set	0	0	0	0	1	D/L	1	0	*	*	Set Interface Data Length (DL)
CG Ram Addr	0	0	0	1	----- Acg -----						Set CG RAM Address then Read/Write CG RAM
Read Busy Flag	0	1	BF	----- Add -----						Read Busy Flag and Address Counter	
Write to RAM	1	0	----- Write Data -----						Write Data into DD RAM or CG RAM		
Read From RAM	1	1	----- Read Data -----						Read Data From DD RAM or CG RAM		

I/D = 1	Increment	I/D = 0	Decrement
S = 1	Enable Shift	S = 0	Disable Shift
S/C = 1	Shift Display	S/C = 0	Shift Cursor
R/L = 1	Shift to Right	R/L = 0	Shift to Left
DL = 1	8 Bit Interface	DL = 0	4 Bit Interface
BF = 1	Display Busy	BF = 0	Ready for Input
DD RAM =	Display Data RAM	CG RAM =	Character Generator RAM
Acg =	CG RAM Address	Add =	DD Ram Address (also Cursor Address)
AC =	Address Counter for DD and CG RAM Addressing	* =	Don't Care

EL BACKLIGHT

Color: Aviation Green Voltage: 115 VAC, 400Hz

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