DS1   jhd12B64E

128x64

JHD12B64E

ATMEGA32-P

VCC GND VO DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 RST CS2 CS1 EN R/W RS VEE LEDA LEDK
1   2   3   7   8   9   10 11 12 13 14   17 16 15 6   4   5   18   19   20

+5V

GND

+5V

GND

+5V

+5V

22E
R2

POT
RV1
3
2
1

+5V

10K
R1

IC1

SW1

SPST

1   2   9   RESET

GND

C
C1

CRYSTAL
X1

C
C2

GND

12   XTAL2

13   XTAL1

32   AREF

10   VCC   30   AVCC

(ADC0)PA0   40
(ADC1)PA1   39
(ADC2)PA2   38
(ADC3)PA3   37
(ADC4)PA4   36
(ADC5)PA5   35
(ADC6)PA6   34
(ADC7)PA7   33

(T0/XCK)PB0   1
(T1)PB1   2
(AIN0/INT2)PB2   3
(AIN1/OC0)PB3   4
(SS)PB4   5
(MOSI)PB5   6
(MISO)PB6   7
(SCK)PB7   8

(SCL)PC0   22
(SDA)PC1   23
(TCK)PC2   24
(TMS)PC3   25
(TDO)PC4   26
(TDI)PC5   27
(TOSC1)PC6   28
(TOSC2)PC7   29

(RXD)PD0   14
(TXD)PD1   15
(INT0)PD2   16
(INT1)PD3   17
(OC1B)PD4   18
(OC1A)PD5   19
(ICP)PD6   20
(OC2)PD7   21

DIL40

GND   AGND
11   31

GND

Note: ISP, Power Supply Connections not shown.
This is reference schematic.
The tutorial was made using STARTER AVR Development board.

Instruction	RS	R/W	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0	Function
Display on/off	L	L	L	L	H	H	H	H	H	L/H	Controls the display on or off. Internal status and display RAM data is not affected. L: OFF, H: ON
Set Cursor (Y address)	L	L	L	H	Y address (0 - 63)						Sets the Y address in the Y address counter.
Set Line (X address)	L	L	H	L	H	H	H	Page (0 - 7)			Sets the X address at the X address register.
Display start line (Z address)	L	L	H	H	Display start line (0 - 63)						Indicates the display data RAM displayed at the top of the screen.
Status read	L	H	Busy	L	On/Off	Reset	L	L	L	L	Read status. BUSY L: Ready H: In operation ON/OFF L: Display ON H: Display OFF RESET L: Normal H: Reset
Write display data	H	L	Write data								Writes data (DB0:7) into display data RAM. After writing instruction, Y address is increased by 1 automatically.
Read display data	H	H	Read data								Reads data (DB0:7) from display data RAM to the data bus.

Do not worry about this {

(Set Cursor, Set Line — handwritten annotations)

PIN NO.	SYMBOL	DESCRIPTION	FUNCTION
1	VSS	GROUND	0V (GND)
2	VDD	POWER SUPPLY FOR LOGIC CIRCUIT	+5V
3	V0	LCD CONTRAST ADJUSTMENT	
4	RS	INSTRUCTION/DATA REGISTER SELECTION	RS = 0 : INSTRUCTION REGISTER RS = 1 : DATA REGISTER
5	R/W	READ/WRITE SELECTION	R/W = 0 : REGISTER WRITE R/W = 1 : REGISTER READ
6	E	ENABLE SIGNAL	
7	DB0	DATA INPUT/OUTPUT LINES	8 BIT: DB0-DB7
8	DB1		
9	DB2		
10	DB3		
11	DB4		
12	DB5		
13	DB6		
14	DB7		
15	CS1	CHIP SELECTION	CS1=1,CHIP SELECT SIGNAL FOR IC1
16	CS2	CHIP SELECTION	CS2=1,CHIP SELECT SIGNAL FOR IC2
17	RST	RESET SIGNAL	RSTB=0,DISPLAY OFF,DISPLAY FROM LINE 0.
18	VEE	NEGATIVE VOLTAGE FOR LCD DRIVING	-10V
19	LED+	SUPPLY VOLTAGE FOR LED+	+5V
20	LED-	SUPPLY VOLTAGE FOR LED-	0V