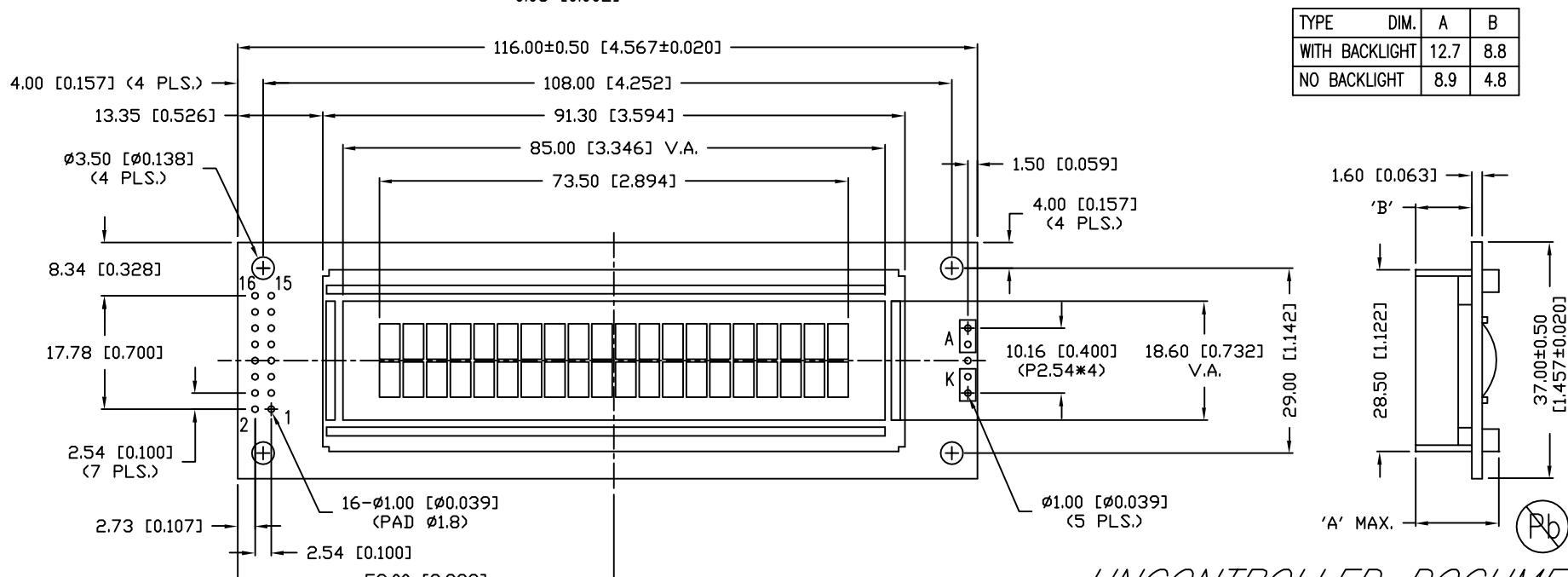
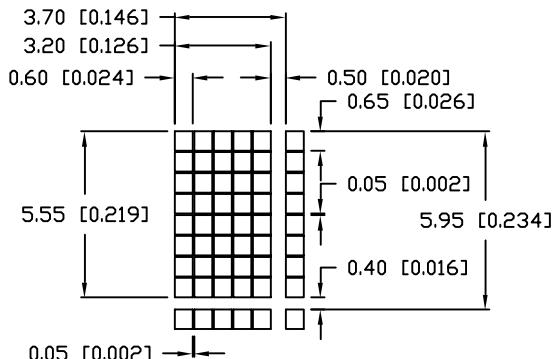


CAUTION: STATIC SENSITIVE DEVICE  
FOLLOW PROPER E.S.D. HANDLING PROCEDURES  
WHEN WORKING WITH THIS PART.

## CHARACTER DETAIL



TYPE	DIM.	A	B
WITH BACKLIGHT		12.7	8.8
NO BACKLIGHT		8.9	4.8

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-0.00 -DECIMAL PRECISION

REV.

PART NUMBER

LCM-S02002DSF-S5

5.55mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX,  
20 x 2 LCD MODULE, 1/16 DUTY, 1/5 IAS,  
EUROPEAN FONT IC.

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290 E. HELEN ROAD  
PALATINE, IL 60067-6976  
PHONE: +1.847.359.2790  
US WEB: www.lumex.com  
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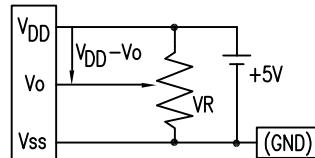
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APPROVED BY:

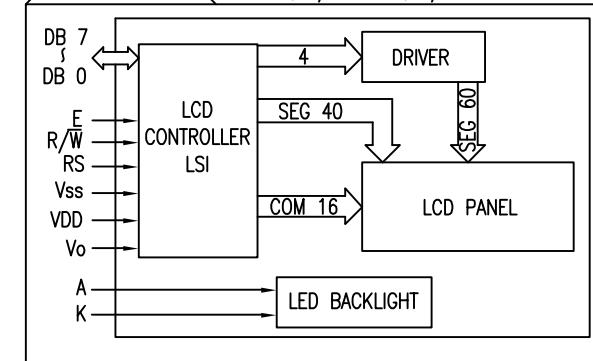
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PAGE: 1 OF 4  
SCALE: N/A

PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	Vss	-	POWER SUPPLY 5V FOR LCD DRIVE
2	V <sub>DD</sub>	-	
3	V <sub>o</sub>	-	
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)
6	E	H,H->L	ENABLE
7~14	DB0~DB7	H/L	DATA BUS-SOFTWARE SELECTABLE 4 OR 8 BIT MODE.
15	A	-	ANODE
16	K	-	CATHODE
			LED BACKLIGHT

V<sub>DD</sub>-V<sub>o</sub>: LCD DRIVING VOLTAGE  
VR: 10KΩ -20KΩ



BLOCK DIAGRAM 20 x 2, 1/16 DUTY, 1/5 BIAS



## ELECTRICAL CHARACTERISTICS

V<sub>DD</sub>=4.7V to 5.3V, T<sub>A</sub>=25°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT	
			MIN.	TYP.	MAX.		
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>ss</sub>		-	5.0	-	V	
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	2.0	3.0	mA	
INPUT VOLTAGE	HIGH	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub>	
	LOW	V <sub>IL</sub>	-	0	-	0.6	V
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	-	2.4	-	V	
	LOW	V <sub>OL</sub>	-	-	-	0.4	V
*LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	I <sub>f</sub> =210mA	-	4.2	4.6	
	CURRENT	I <sub>f</sub>	-	-	210	-	mA
	POWER CUNSUMPTION	PD	-	-	882	-	mW
	LUMINOUS	L	I <sub>f</sub> =210mA	70	-	-	cd/m <sup>2</sup>
	COLOR	-	-	-	-	-	nm

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

## ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>ss</sub>	T <sub>a</sub> =25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>o</sub>	-	4.2@50°C	4.8@0°C	V
INPUT VOLTAGE	V <sub>I</sub>	T <sub>a</sub> =25°C	V <sub>ss</sub>	V <sub>DD</sub>	V
OPERATING TEMPERATURE	Topr	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T <sub>tsg</sub>	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

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REV.

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290 E. HELEN ROAD  
PALATINE, IL 60067-6976  
PHONE: +1.847.359.2790  
US WEB: www.lumex.com  
TW WEB: www.lumex.com.tw

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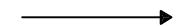
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UPPER 4 BIT LOWER	LLLL	LLH	LLH	LLHH	LHLL	LHLH	LHHL	LHHH	HLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
LLH	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LLH	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LLHH	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LHLL	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LHLH	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LHHL	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890
LHHH	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890	!1234567890

TABLE CONTINUED



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HLLL															
HLLH															
HLHL															
HLHH															
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