# LCD-020N002A



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Vishay

## 20 x 2 Character LCD

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### **FEATURES**

- Type: Character
- Display format: 20 x 2 characters
- Built-in controller: ST 7066 (or equivalent)
- Duty cycle: 1/16
- 5 x 8 dots includes cursor
- + 5 V power supply (also available for + 3 V)
- LED can be driven by pin 1, pin 2, pin 15, pin 16 or A and K
- N.V. optional for + 3 V power supply
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

MECHANICAL DATA							
ITEM	STANDARD VALUE	UNIT					
Module Dimension	116.0 x 37.0						
Viewing Area	85.0 x 18.6						
Dot Size	0.60 x 0.65						
Dot Pitch	0.65 x 0.70	- mm					
Mounting Hole	108.0 x 29.0						
Character Size	3.2 x 5.55						

ABSOLUTE MAXIMUM RATINGS										
ІТЕМ	SYMBOL	STAN	UNIT							
	STWDUL	MIN.	TYP.	MAX.						
Power Supply	$V_{\text{DD}}$ to $V_{\text{SS}}$	- 0.3	-	7.0	v					
Input Voltage	VI	- 0.3	-	V <sub>DD</sub>						

Note

V<sub>SS</sub> = 0 V, V<sub>DD</sub> = 5.0 V

ELECTRICAL CHARACTERISTICS										
ITEM	SYMBOL	CONDITION	ST	UNIT						
	STMBOL	CONDITION	MIN. TYP. MAX.							
Input Voltage	V <sub>DD</sub>	$V_{DD} = +5 V$	4.7	5.0	5.3	v				
input voltage	V DD	$V_{DD} = + 3 V$	2.7	3.0	5.3					
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> = + 5 V	-	1.0	1.2	mA				
		- 20 °C	5.0	5.1	5.7					
Recommended LC Driving		0 °C	4.6	4.8	5.2					
Voltage for Normal Temperature	$V_{\text{DD}}$ to $V_0$	25 °C	4.1	4.5	4.7	V				
Version Module		50 °C	3.9	4.2	4.5					
		70 °C	3.7	3.9	4.3					
LED Forward Voltage	V <sub>F</sub>	25 °C	-	4.2	4.6	V				
LED Forward Current	IF	25 °C	-	210	420	mA				
EL Power Supply Current	I <sub>EL</sub>	V <sub>EL</sub> = 110 V <sub>AC</sub> , 400 Hz	-	-	5.0	mA				

OPTION	S								
		PROCES	S COLOR				BACK	LIGHT	
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
х	x	х	х	х		х	х	х	

For detailed information, please see the "Product Numbering System" document.

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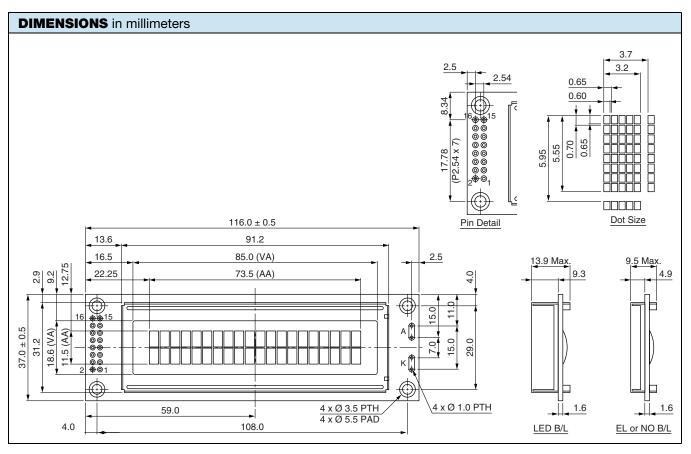
RoHS COMPLIANT www.vishay.com

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#### **DISPLAY CHARACTER ADDRESS CODE**

Display Position																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DD RAM Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
DD RAM Address	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53

INTERFACE I	PIN FUNCTION		
PIN NO.	SYMBOL	FUNCTION	
1	V <sub>SS</sub>	Ground	
2	V <sub>DD</sub>	+ 3 V or + 5 V	
3	V <sub>0</sub>	Contrast adjustment	
4	RS	H/L register select signal	
5	R/W	H/L read/write signal	
6	E	$H \rightarrow L$ enable signal	
7	DB0	H/L data bus line	
8	DB1	H/L data bus line	
9	DB2	H/L data bus line	
10	DB3	H/L data bus line	
11	DB4	H/L data bus line	
12	DB5	H/L data bus line	
13	DB6	H/L data bus line	
14	DB7	H/L data bus line	
15	A/V <sub>EE</sub>	+ 4.2 V for LED/negative voltage output	
16	К	Power supply for B/L (0 V)	



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