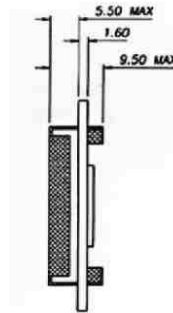
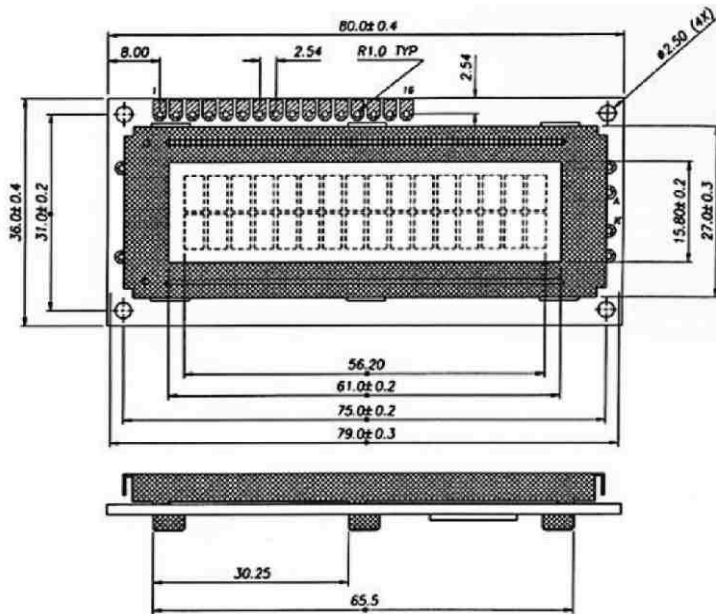


# NEUHOLD - ELEKTRONIK INFO

Griesplatz 1 und Griesgasse 33 A 8020 Graz Fax. 0316/717419 Telefon 0316 - 711245  
www.neuhold-elektronik.at

## Display 2x16 Zeichen

mit Hintergrundbeleuchtung  
Type 16216



PIN NO.	SYMBOL	FUNCTION
1	V <sub>SS</sub>	Ground terminal of module
2	V <sub>DD</sub>	Supply terminal of module +5V
3	V <sub>O</sub>	Power supply for Liquid crystal Drive
4	RS	Register Select RS = 0 ... Instruction Register RS = 1 ... Data Register
5	R/W	Read/Write R/W = 1 ... Read R/W = 0 ... Write
6	E	Enable
7 - 14	DB0-DB7	Bi-directional Data Bus. Data Transfer is performed once, thru DB0-DB7, in the case of interface data. Length is 8-bits; and twice, thru DB4-DB7, in the case of interface data length is 4-bits. Upper four bits first then lower four bits.
15	L-	LED or EL lamp power supply terminals.
16	L+	

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Supply voltage	V <sub>DD</sub>		4.5	5.0	5.5	V
LCD Drive Voltage	V <sub>DD</sub> -V <sub>O</sub>		4.2	4.5	4.8	V
Normal Temp Model (TN/STN)	(V <sub>LCD</sub> )		6.4	6.8	7.5	V
Wide Temp Model (STN)			-	1.0	2.0	mA
Supply Current <sup>1</sup>	I <sub>DD</sub>	V <sub>DD</sub> = 5V V <sub>O</sub> = 0V min	-	1.0	2.0	mA
1 x 16 DMM			-	1.5	3.0	mA
2 x 16 DMM			-	2.5	4.0	mA
1 x 20, 2 x 20 DMM			-	-	-	-
4 x 20, 2 x 40 DMM			-	-	-	-
Input voltage <sup>1</sup>	V <sub>IL</sub> V <sub>IH</sub>		0 2.0	- -	0.6 V <sub>DD</sub>	V V
Output voltage <sup>2</sup>	V <sub>OL</sub> V <sub>OH</sub>	I <sub>OL</sub> = 1.6 mA I <sub>OH</sub> = 0.2 mA	- 2.4	- -	0.4 -	V V
LED Lightpipe Current	I <sub>LED</sub>	L+ - L- = 5V	20	-	60	mA
1 x 8, 1 x 16, 2 x 16 DMM			40	-	80	mA
2 x 20 DMM			-	-	-	-
LED Lightbox Current			40	-	100	mA
1 x 8, 1 x 16 DMM			40	-	250	mA
2 x 16 DMM			150	-	300	mA
1 x 20, 2 x 20, 4 x 20 DMM			-	-	-	-

DRIVE VOLTAGE (V<sub>LCD</sub>) IS NOT IDENTICAL FOR LCD MODULES MANUFACTURED BY DIFFERENT MANUFACTURERS. ACCEPTABLE RESULTS CAN BE OBTAINED BY ADJUSTING V<sub>LCD</sub>. IF THIS DOES NOT WORK, HITECH CAN MODIFY DISPLAY TO MEET CUSTOM NEEDS.

Note: 1. Applies to DB0 - DB7, E, RS and R/W  
2. Applies to DB0 - DB7  
3. Supply current may slightly exceed MAX. Rating if SAMSUNG controller is used without pull-up resistor for DB0 - DB7.