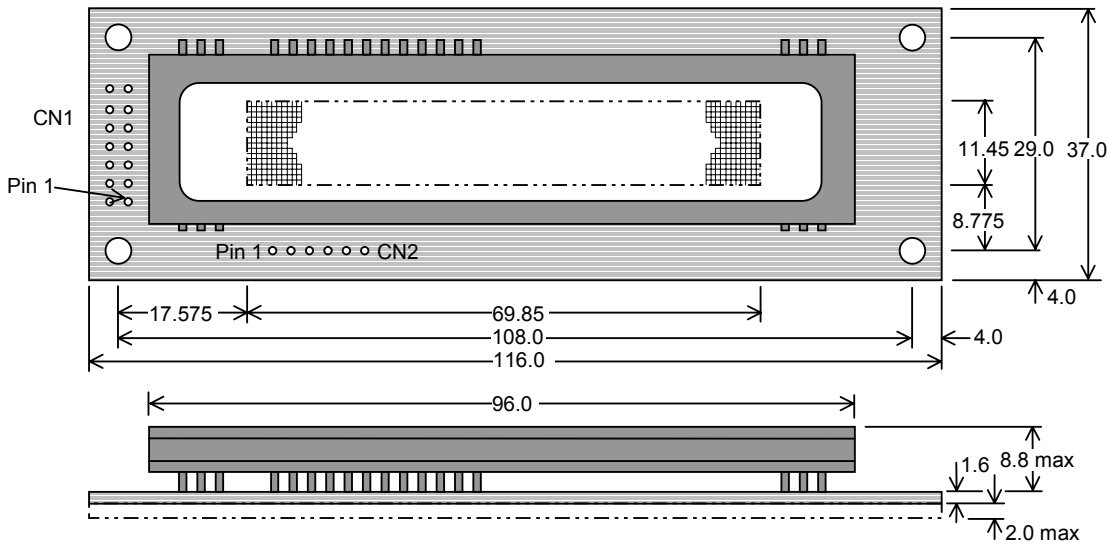


# Dot Graphic VFD Module

# GU140x16G-7003

- ❑ 140x16 Dot Graphic
- ❑ Single 5V Supply
- ❑ High Brightness Blue Green Display
- ❑ Operating Temp -40°C to +85°C
- ❑ 2 ASCII Fonts (5x7, 6x8)
- ❑ Async. & Sync. Serial Interface

The module includes the Vacuum Fluorescent Display glass, VF drivers and micro-controller ICs with refresh RAM, character generator and interface logic. The asynchronous serial interface accepts baud rates up to 115,200 with none parity. The module is ready to receive ASCII characters without initialization commands.



Dimensions in mm & subject to tolerances. Mounting holes 3.5mm dia.

### ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	VCC	5.0VDC +/- 5%	GND=0V
Power Supply Current	ICC	290mADC typ.	VCC=5V
Logic High Input	VIH	0.8VDC min. Vcc max.	VCC=5V
Logic Low Input	VIL	0VDC min. 0.2VDC max.	VCC=5V
Logic High Output	VOH	3.5VDC min. Vcc max.	IOH = -10uA
Logic Low Output	VOL	0VDC min. 0.6VDC max.	IOL =4mA

The power on rise time should be less than 100ms. Inrush current at power on can be 2 x ICC.

### OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Display Area (XxY mm)	69.85 x 11.45
Dot Size/Pitch (XxY mm)	0.35 x 0.575 / 0.5 x 0.725
Luminance	700 cd/m <sup>2</sup> Typ.
Colour of Illumination	Blue-Green (Filter for colours)
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Operating Humidity (non condensing)	20 to 80% RH @ 25°C

### SOFTWARE COMMANDS – Popular codes, more included

Command	Code
Write Character to Display	20H-FFH
BS, HT, LF, CR, Display Clear	08H, 09H, 0AH, 0DH, 0CH
Initialize Display	1BH 40H
Specify International Font	1BH 52H n
Vertical Scroll Mode	1FH 02H
Horizontal Scroll Mode	1FH 03H
Cursor Set	1FH 24H xL xH yL yH
Scroll Display Action	1FH 28H 61H 10H wL wH cL cH s
Display Blank	1FH 28H 61H 11H p t1 t2 c
Screen Saver	1FH 28H 61H 40H p
Bit Image Display Group	1FH 28H 66H 11H xL xH
Font Magnified Display	1FH 28H 67H 40H x y
Brightness Level Setting	1FH 58H n

The module defaults to 5x7 font, cursor top left at power on.

### COMMON FONT

	00	10	20	30	40	50	60	70
00				G	A	P		
01				1	A	B		
02				2	B	R		
03				3	C	S		
04				4	D	T		
05				5	E	U		
06				6	F	V		
07				7	F	V		
08				C	H	X		
09				>	9	I		
0A				*	#	J		
0B				+	#	K		
0C				.	<	L		
0D				=	M	I		
0E				.	>	N		
0F				/	?/	0		

### INTERNATIONAL FONTS (n=0)

	80	90	A0	B0	C0	D0	E0	F0
00	ø	é	ê	ë	ì	í	î	ï
01	ü	ä	å	æ	ç	ø	ù	ú
02	û	ü	ä	å	æ	ç	ø	ù
03	û	ü	ä	å	æ	ç	ø	ù
04	û	ü	ä	å	æ	ç	ø	ù
05	û	ü	ä	å	æ	ç	ø	ù
06	û	ü	ä	å	æ	ç	ø	ù
07	û	ü	ä	å	æ	ç	ø	ù
08	û	ü	ä	å	æ	ç	ø	ù
09	û	ü	ä	å	æ	ç	ø	ù
0A	û	ü	ä	å	æ	ç	ø	ù
0B	û	ü	ä	å	æ	ç	ø	ù
0C	û	ü	ä	å	æ	ç	ø	ù
0D	û	ü	ä	å	æ	ç	ø	ù
0E	û	ü	ä	å	æ	ç	ø	ù
0F	û	ü	ä	å	æ	ç	ø	ù

CN1 is not used on this module.

Full specification available on request.

### SERIAL INTERFACE – CN2 (select with J2)

Pin	Async. Sig	Sync. Sig
1	VCC (5V)	VCC (5V)
2	SIN	SIN
3	GND	GND
4	SBUSY	SBUSY
5	NC	SCK
6	/RESET	/RESET

### CONTACT

**Noritake Sales Office Tel Nos**  
 Nagoya Japan: +81 (0)52-561-9867  
 Canada: +1-416-291-2946  
 Chicago USA: +1-847-439-9020  
 Munchen (D): +49 (0)89-3214-290  
 Itron UK: +44 (0)1493 601144  
 Rest Europe: +49 (0)61-0520-9220  
 www.noritake-iron.com

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