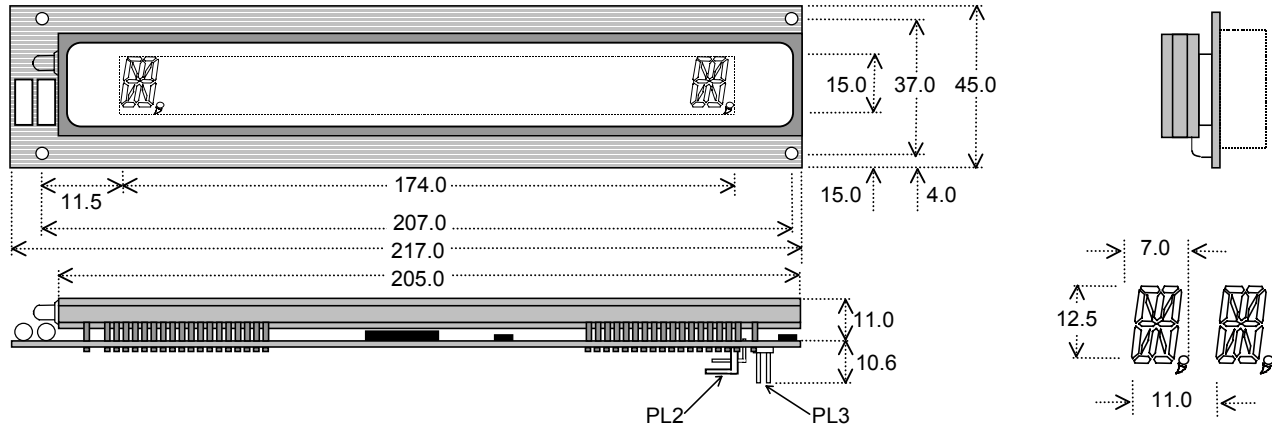


Vacuum Fluorescent Display Module

VAF1613-KV12CS

- 1 Line x 16 Characters
- 13mm High 16 Segment Character
- Single 12V Supply
- High Brightness Blue-Green Display
- 64 Character Font Set
- 8 Bit Sync-Serial HCMOS Buffered Interface

This single board display module consists of a 16 character VFD, a DC/DC converter and controller IC with refresh memory and character generation. The module has a dual reset function to enable fast resynchronisation of data. The module uses a patent pending transformerless dc/dc converter.



Dimensions in mm & subject to tolerances. Mounting holes 4.0mm dia.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	VCC	12VDC +/- 5%	GND=0V
Power Supply Current	ICC	Typ. 300 mAdc	VCC=12V
Logic High Input	VIH	2.4VDC min.	VCC=12V
Logic Low Input	VIL	1.0VDC max.	VCC=12V

Note:- Power-on rise time for VCC should be less than 100ms.

OPTICAL and ENVIRONMENTAL SPECIFICATION

Parameter	Value
Character Size (X x Y)	7.0mm x 12.5mm
Character Pitch	11.0mm
Luminance	Min 700 cd/m ² (200 fL)
Colour Of Illumination	Blue-Green (505nm)
Operating Temperature	-10°C to + 55°C
Storage Temperature	-20°C to + 70°C
Operating Humidity	20 to 80% RH (non condensing)

SOFTWARE COMMANDS

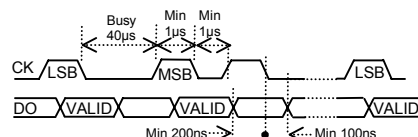
Instruction	Hex
Character Write	00-3F
Cursor Position AF=1...AF=16	A0-AF
Duty Cycle Register	E0-FF

EXAMPLE INITIALISATION

Function	Data
Set Duty Cycle (Display On)	FFH
Set Buffer Pointer	AFH
Send Data (00→3FH)	X+X..

At power on reset the duty cycle is set to 00H (Display Off). Use the reset input prior to every message for good synchronization.

8 BIT SYNCHRONOUS TIMING



CONNECTOR PL2

Pin	Func	Pin	Func
1	VCC	4	D0
2	SCK	5	/RESET
3	VCC	6	GND

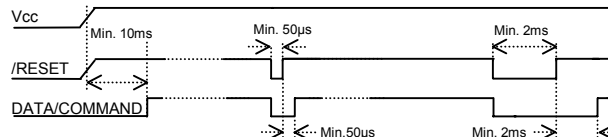
CONNECTOR PL3

Pin	Func	Pin	Func
1	VCC	2	VCC
3	NP	4	NC
5	NC	6	NC
7	NC	8	SCK
9	D0	10	/RESET
11	GND	12	GND

CHARACTER

00	08	10	18	20	28	30	38
01	09	11	19	21	29	31	39
02	0A	12	1A	22	2A	32	3A
03	0B	13	1B	23	2B	33	3B
04	0C	14	1C	24	2C	34	3C
05	0D	15	1D	25	2D	35	3D
06	0E	16	1E	26	2E	36	3E
07	0F	17	1F	27	2F	37	3F

POWER ON RESET SHORT RESET LONG RESET



A Short reset clears the display and positions the buffer pointer at the left most character. A Long Reset causes the controller to re-initialise.

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-itron.com

Subject to change without notice.
 IUK Doc Ref: 04388 Iss:2 13Aug03