

BABCOCK

DISPLAY PRODUCTS DIVISION

MODEL: **VF-0140-1X**

1X - denotes dash numbers below

1 X 40 DOT MATRIX (5 X 7), VACUUM FLUORESCENT DISPLAY

The VF-0140-16 and VF-0140-17 are 1 x 40 character vacuum fluorescent display modules with 5-mm high characters arranged in a 5 x 7 dot matrix format. Below each character is an underline cursor segment.

The only difference between the VF-0140-16 and the VF-0140-17 is their font tables. The VF-0140-16 font table contains Turkish and Greek characters. The VF-0140-17 contains Czech character.

The hardware design of the VF-0140-1X (X = 6, 7) (includes an on-board DC-DC converter which generates all the voltages required to drive the display and allows the module to be operated from a single +5 volt DC power supply. An on-board microcontroller refreshes the display, accepts characters from the host, and implements editing control codes and commands. The VF-0140-1X is interfaced to the host over a TTL level 8-bit bi-directional data bus. ASCII characters data or control words can be written to the module and busy status can be read by the host for maximum loading speed. A TTL level 1200 baud serial interface is also implemented.

The VF-0140-1X has the following function capability: Data Write, Data Read, Command and Control Functions, Status Read, Serial Operation, Self Test, Alternate Character Font, Optional Circuit for RS-232 Serial Input.

FEATURES

| | |
|------------------------------------|---|
| Format: 1 line of 40 characters | Font: English, General European, Scandinavian, German |
| Character Height: 5.05mm + cursor | Color: Blue Green |
| Character Spacing: 4.75mm, C to C | Luminance: 100 fL min |
| Character Design: 5 x 7 dot matrix | Viewing Angle: 150° |
| Character Set: 96 Character ASCII | Life: 100,000+ hours |

SPECIFICATIONS

Absolute Maximum Ratings

| PARAMETER | SYM | MIN | MAX | UNITS |
|------------------------------|-----------------|------|-----------------|-------|
| Supply Voltage | V _{CC} | 4.75 | 5.25 | Volts |
| High Level Input Voltage | V _{IH} | - | V _{CC} | Volts |
| Low Level Input Voltage | V _{IL} | - | 0.8 | Volts |
| Vibration (Sine) (10 -55 Hz) | | - | 2 | G |
| Shock Non-Operating | | | 20 | G |

Recommended Operating Conditions

| PARAMETER | SYM | MIN | TYP | MAX | UNITS |
|--|-----------------|------|-----|-----------------|-------|
| Supply Voltage | V _{CC} | 4.75 | 5.0 | 5.25 | VDC |
| Supply Current | I _{CC} | - | 0.6 | 0.7 | A |
| High Level Output Current (V _{OH} = 2.4VDC) | I _{OH} | - | - | -400 | µA |
| Low Level Output Current (V _{OL} = 0.45VDC) | I _{OL} | - | - | 2 | mA |
| High Level Input Voltage | V _{IH} | 2.0 | - | V _{CC} | VDC |
| Low Level Input Voltage | V _{IL} | -0.5 | - | 0.8 | VDC |
| High Level Output Voltage | V _{OH} | 2.4 | - | - | VDC |
| Low Level Output Voltage | V _{OL} | - | - | 0.45 | VDC |

Environmental Characteristics

| | |
|-----------------------------|-------------------------|
| Operating Temperature | 0 to 55 °C |
| Storage Temperature | -40 to +85 °C |
| Operating Relative Humidity | 0 to 95% non-condensing |

SPECIFICATIONS ARE FOR REFERENCE ONLY

9200-0105 Rev. A

Phone: (714) 994-6500 **14930 East Alondra Blvd., La Mirada, CA 90638-5752** Fax: (714) 994-3013

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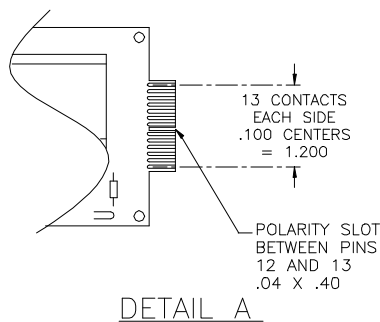
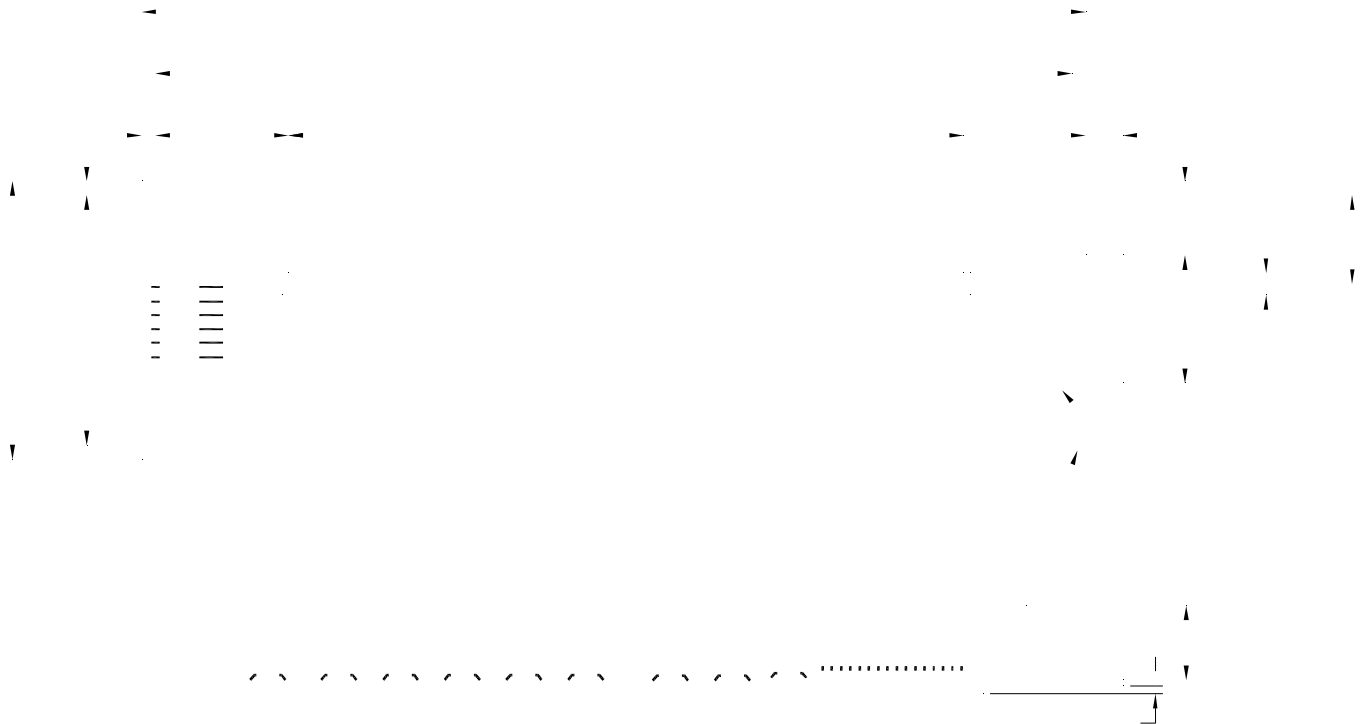
J1 - Power Connector

| Pin Number | Function |
|------------|----------|
| 1 | +5 VDC |
| 2 | N/C |
| 3 | Dimming |
| 4 | Common |
| 5 | N/C |
| 6 | RESET |

J2 - Data Connector

| Pin Number | Function | Pin Number | Function | Pin Number | Function |
|------------|---------------------|------------|---------------------------|------------|---------------------------|
| 1 | Serial In/Self Test | 10 | Common | 19 | Data 2 ⁴ |
| 2 | Common | 11 | Data 2 ⁰ (LBS) | 20 | Common |
| 3 | Device Select | 12 | Common | 21 | Data 2 ⁵ |
| 4 | Common | 13 | Data 2 ¹ | 22 | Common |
| 5 | Read | 14 | Common | 23 | Data 2 ⁶ |
| 6 | Common | 15 | Data 2 ² | 24 | Common |
| 7 | Address Zero Bit | 16 | Common | 25 | Data 2 ⁷ (MSB) |
| 8 | Common | 17 | Data 2 ³ | 26 | Common |
| 9 | Write | 18 | Common | | |

Outline and Mounting Drawing:



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