



# DISPLAYS, INC.

## DOT MATRIX DISPLAYS 1.0" Character Height

Our series of dot matrix displays for large audience or long distance viewing were designed for simple & reliable operation. The displays come in two versions, one row of twenty characters and the other has two rows of twenty characters. These units are designed so that they can be butted end-to-end or stacked on top of each other and will appear to have uniform spacings.

The one inch high character size is visible up to seventy-five feet away and the gas discharge high brightness is visible in all ambient conditions. The 5 x 7 dot matrix format allows well defined alphanumeric characters and other special character sets.

### SPECIFICATIONS

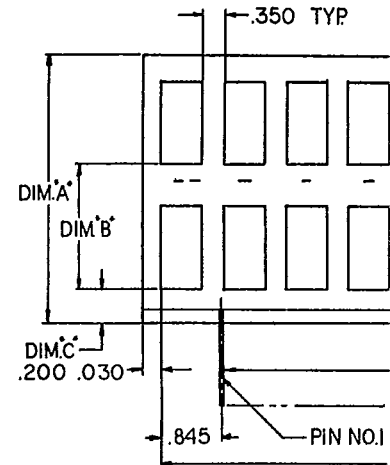
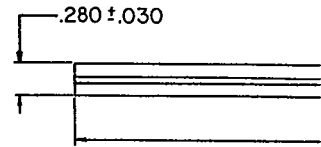
	Single Row	Double Row
Panel Size:	2.0" x 15" x .3"	3.3" x 15" x .3"
No. of Characters:	20	40

Character Format	5 x 7 Dot Matrix
Vertical Dot Spacing	.150" Center-to-Center
Horizontal Dot Spacing	.100" Center-to-Center
Character Size	1.0" x .50"
Character Spacing	2 dots between characters 3 dots between rows
Light Output	80 ft. L. - 25 ft. L.
Contrast Ratio	15:1 - 6:1
Viewing Distance	145 Degrees
Striking Voltage	190 VDC
Sustaining Voltage	165 VDC
Duty Cycle	5%

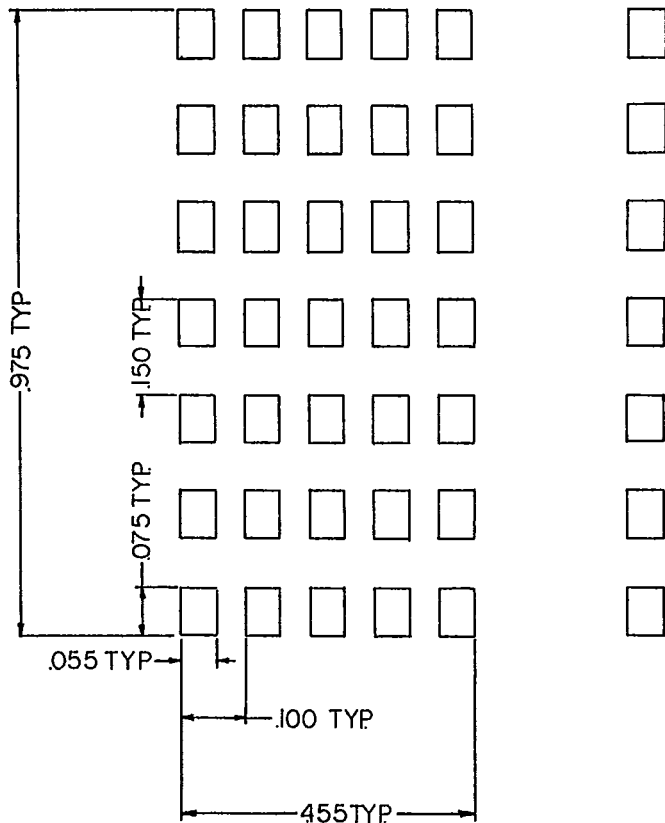
# DOT MATRIX DISPLAYS

## NOTES

1. All dimensions are in inches.
2. All tolerances are  $\pm .005$  unless otherwise noted.
3. All keep alives are  $.025 \times .100$ .
4. All keep alives are internally covered.
5. All pins are flying lead type,  $.035 \times .006$  phosphor bronze.
6. The display is made to be buttable and stackable.
7. Top and bottom arrays have common anodes along with the associated scanning keep alives.
8. Plug opening will be centered on the bottom edge of the display.
9. Pins and anodes are numbered from left to right.



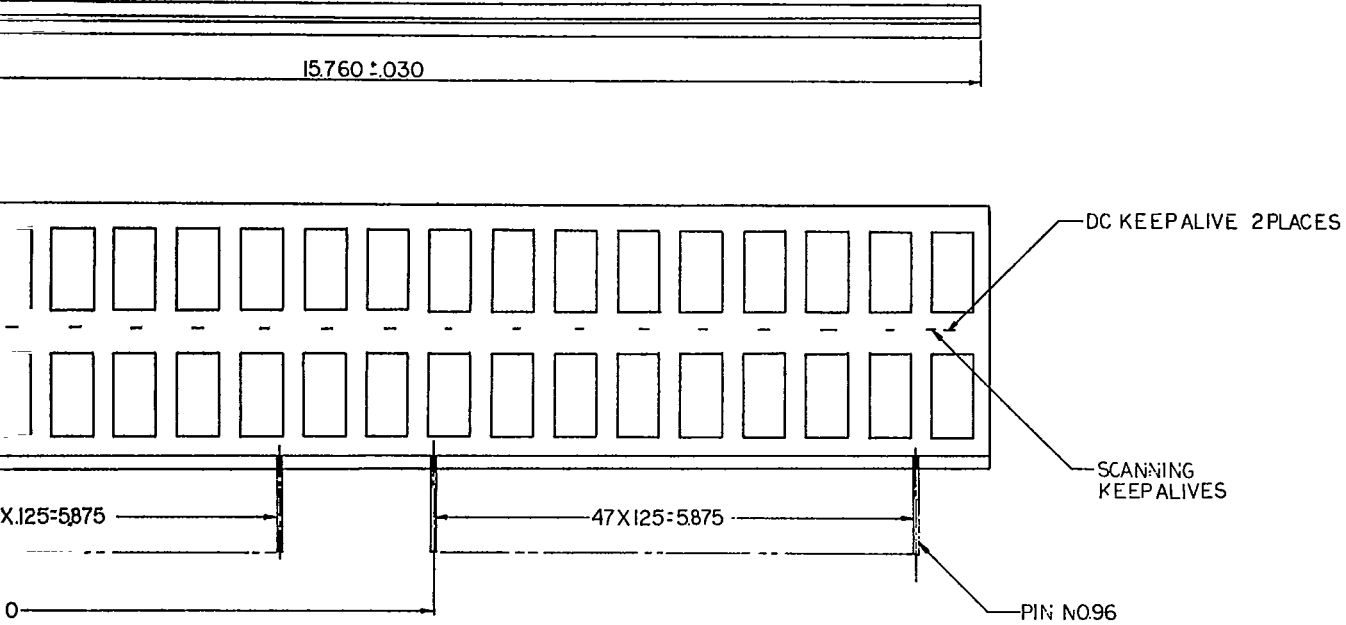
	DIM A $\pm .030$	DIM B $\pm .030$	DIM C $\pm .030$
DMIX2040	1.930	0	740
DMIX2040	3.245	1.65	400



DOT MATRIX DETAIL

PIN NO.	FUNCTION
1	Left Keep Alive Anode
2	Left DC Keep Alive Cathode
3	Anode No. 1
4	Cathode No. 1
5	Anode No. 2
6	*Cathode 36
7	Cathode 18
8	*Cathode 54
9	Anode No. 3
10	Cathode No. 2
11	*Cathode No. 37
12	Cathode No. 19
13	*Cathode No. 55
14	Anode No. 4
15	Cathode No. 3
16	*Cathode No. 38
17	Cathode No. 20
18	*Cathode No. 56
19	Anode No. 5
20	Cathode No. 4
21	*Cathode No. 39
22	Cathode No. 21
23	*Cathode No. 57
24	Anode No. 6

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PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION
25	Cathode No. 5	49	Anode No. 11	73	*Cathode No. 67
26	*Cathode No. 40	50	Cathode No. 10	74	Anode No. 15
27	Cathode No. 22	51	*Cathode No. 45	75	Cathode No. 15
28	*Cathode No. 58	52	Cathode No. 27	76	*Cathode No. 50
29	Anode No. 7	53	*Cathode No. 63	77	Cathode No. 32
30	Cathode No. 6	54	Anode No. 12	78	*Cathode No. 68
31	*Cathode No. 41	55	Cathode No. 11	79	Anode No. 16
32	Cathode No. 23	56	*Cathode No. 46	80	Cathode No. 16
33	*Cathode No. 59	57	Cathode No. 28	81	*Cathode No. 51
34	Anode No. 8	58	*Cathode No. 64	82	Cathode No. 33
35	Cathode No. 7	59	No Connection	83	*Cathode No. 69
36	*Cathode No. 42	60	Cathode No. 12	84	Anode No. 17
37	Cathode No. 24	61	*Cathode No. 47	85	Cathode No. 17
38	*Cathode No. 60	62	Cathode No. 29	86	*Cathode No. 52
39	Anode No. 9	63	*Cathode No. 65	87	Cathode No. 34
40	Cathode No. 8	64	Anode No. 13	88	*Cathode No. 70
41	*Cathode No. 43	65	Cathode No. 13	89	Anode No. 18
42	Cathode No. 25	66	*Cathode No. 48	90	Cathode No. 35
43	*Cathode No. 61	67	Cathode No. 30	91	Anode No. 19
44	Anode No. 10	68	*Cathode No. 66	92	*Cathode No. 53
45	Cathode No. 9	69	Anode No. 14	93	Anode No. 20
46	*Cathode No. 44	70	Cathode No. 14	94	Scanning Keep Alive Cathodes
47	Cathode No. 26	71	*Cathode No. 49	95	Right DC Keep Alive Cathode
48	*Cathode No. 62	72	Cathode No. 31	96	Right Keep Alive Anode

\*Indicates pin is no connection on single unit (DM1x20x1.0)

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# LONG LIFE FLAT PLASMA DISPLAY PANELS

The plasma panel type DM2x20x1.0 is a long life gas discharge display. Each panel has two rows of twenty character positions of 35 (5 x 7) Cathode Dots or Pixels for a total of forty characters or 1400 pixels. The 5 x 7 pixel arrays are arranged on approximate .150" centers vertically and .100" centers horizontally resulting in character heights of 1.0" and character widths of 0.5" respectively. There are approximately two spaces between character positions horizontally and three spaces between character rows vertically. These spacings are maintained uniformly, both within each panel and between stacked and butted assembled panels, to obtain the equivalent of an integral large panel display regardless of the number of panels used or the ultimate size of the total configured display.

Like cathode dots for each row of character positions are bussed together internally and brought out

separately to two sets of 35 external connection pads. These can be driven to display all of the standard 5 x 7 ASCII character formats.

The display is designed to be operated in a multiplexed mode with a **common** anode connection covering both rows for each of the 20 display positions. The separate cathode drivers for each row are driven synchronously and time shared among their respective character positions. Characters are successively displayed by applying a more positive voltage to the Anode common to both rows, while a more negative voltage is applied to the appropriate cathodes in each row, thus achieving glowing dots or pixel ionization for each position. The operation is performed at a high enough multiplexing or refreshing rate to result in a high brightness, flicker free display. "Keep Alive" elements are also provided within the panel to help initiate and maintain uniform ionization.

## General Environmental Data

- Operating Altitude 0 to 70,000 ft.
- Operating Temperature 0° to 55° C
- Storage Temperature -40° to +85° C
- Relative Humidity (No Condensation) 85% Max.
- Shock 50g ½ sinewave for 11 ms
- Vibration 2g, 50 to 2000 HZ

- Custom designs are also available and can combine digital, alphanumeric and bargraphs on the same display.
- Displays, Inc., can also supply their displays with drive electronics if that is necessary. Supplied this way, the customer would only need to furnish a supply voltage and the ASCII signal.
- Our engineering sales staff will be pleased to help you meet your requirements.



**DISPLAYS, INC.**

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