

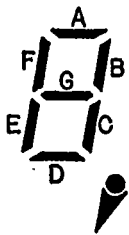
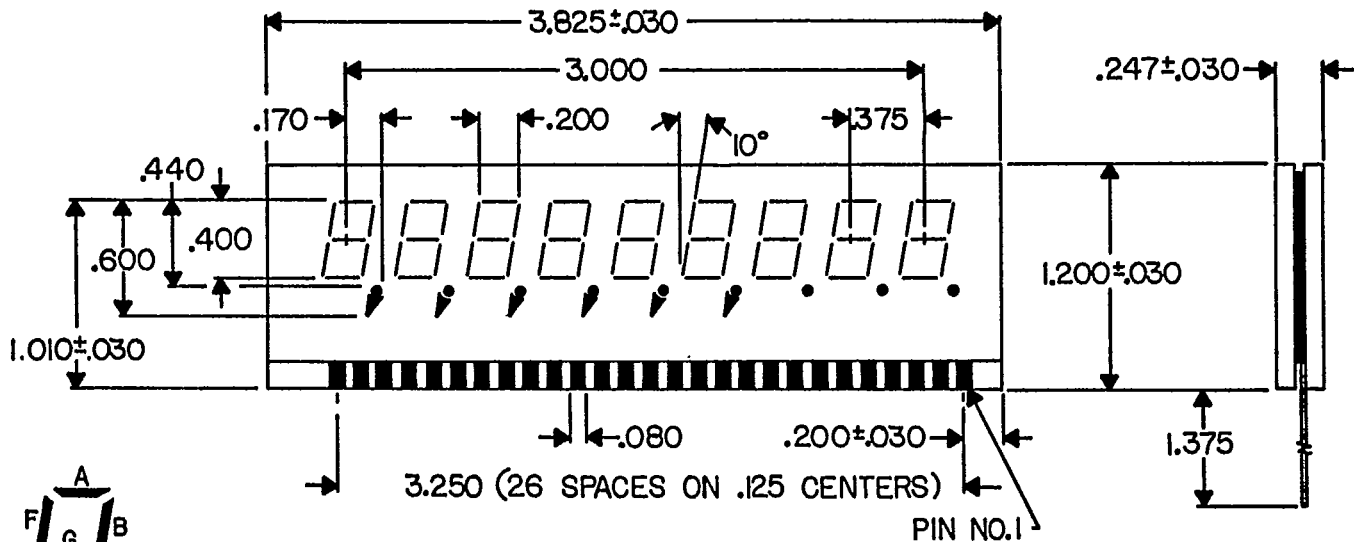
T-41-33



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## ARO9400 - DIGITAL (.4 inch high) DISPLAYS

The model ARO9400 is a 9 digit display panel with decimal points and commas. It is a long life gas discharged, segmented display panel in sealed envelopes. This display has .40 inch high characters.



FONT DETAIL

This display is designed to be operated in a multiplexed mode where the cathode drive and decoder circuitry is time shared among all digits of the displays. Like cathode segments for all the digits are bussed.

### FEATURES

- All Glass Construction
- Minimal Connections
- 7 Segment Format
- Sunlight Readable
- High Reliability
- Completely Flat Design
- Neon Orange Color
- Excellent Contrast
- Wide Viewing Angle (140°)
- Thin Package (.3 inch)
- Low Power Consumption

### PIN OUT

PIN	FUNCTION	PIN	FUNCTION
1	Segment A Cathode	15	No Connection
2	Anode No. 1	16	No Connection
3	Segment B Cathode	17	No Connection
4	No Connection	18	Anode No. 6
5	Segment C Cathode	19	No Connection
6	Anode No. 2	20	Anode No. 7
7	Decimal Point Cathode	21	Segment D Cathode
8	Anode No. 3	22	No Connection
9	Comma Cathode	23	Segment E Cathode
10	No Connection	24	Anode No. 8
11	No Connection	25	Segment G Cathode
12	Anode No. 4	26	Anode No. 9
13	No Connection	27	Segment F Cathode
14	Anode No. 5		

**AR09400****Electrical Characteristics at 25° C**

Parameter	Units
Panel Voltage Drop .....	130 Vdc Typ.
(Notes 2, 6)	
Segment Current =	4.15 mA
Initial Ionization Time .....	5 sec max.
(Notes 10, 11)	
Peak Cathode Voltage =	- 180V

**Environmental & Optical Characteristics**

Parameter	Units
Operating Temperature .....	0° C to +55° C
Storage Temperature .....	-40° C to +85° C
Altitude .....	70,000 ft. max.
Viewing Angle .....	120°
Brightness .....	130 ft. 1 Typ.
	(Note 4)

**Absolute Maximum Rating (See Note 1)**

Parameter	Units
Peak Cathode Voltage .....	-240 Vdc max.
(Notes 2, 3)	
Cathode Current (Note 5) .....	4.5 mA max.

**Operating Conditions at 25° C (Notes 6, 7, 8)**

Parameter	Typical Value
Scan Direction .....	Left to Right
Segment Cathode Current .....	3.4 mA
(Notes 4,5)	
DCKA Cathode Current .....	0.50 mA
(Notes 4, 5)	
Peak Cathode Voltage .....	-200 Vdc
(Notes 2, 3)	
Cathode Off Voltage .....	-110 Vdc
(Note 3)	
Anode Off Voltage .....	-110 Vdc
(Note 3)	
Digit Period .....	2.8 mS
Cathode on Time .....	2.4 mS
(Note 12)	
Cathode Blanking Interval .....	400 uS
Reionization Time .....	100 uS max.
(Note 13)	
Cathode Blanking Overlap .....	200 uS
Display Scan Period .....	17 mS
Panel Voltage Drop .....	150V

**NOTES:**

1. Values beyond which the life of the device may be reduced.
2. Prior to ionization, the voltage between the anode and any cathode may equal this voltage and panel damage will not occur. The peak cathode current must, however, be limited to the absolute maximum rating.
3. Voltage referenced to anode on voltage.
4. Light output is measured using a calibrated Gamma Scientific Model 3030 Photometer mounted normal to an unfiltered panel operating at the typical conditions shown under "Operating Conditions". A 0.006" diameter optical pickup is focused on the center of the segment under test.
5. The peak segment current is the value existing during the digit period.
6. Typical waveforms are shown in Figure 2.
7. Rise and fall times of anode address and cathode select signals shall be 1 uS max. measured between 10% and 90% points.
8. Stray capacitance to ground on any anode or cathode drive line shall not exceed 30 pf. Stray capacitance between any drive lines shall not exceed 20 pf.
9. Ionization time is measured with numeral "0" displayed in the rightmost with all other digits blanked.
10. Non-significant zero blanking is permitted but one digit must always be energized.
11. Digit period minus cathode blanking interval is the cathode on time.
12. Relonization time is measured with all segments and digits displayed.
13. Cathode blanking overlap is the interval between turn-off of anode for previous digit and turn-on of cathodes for next digits.



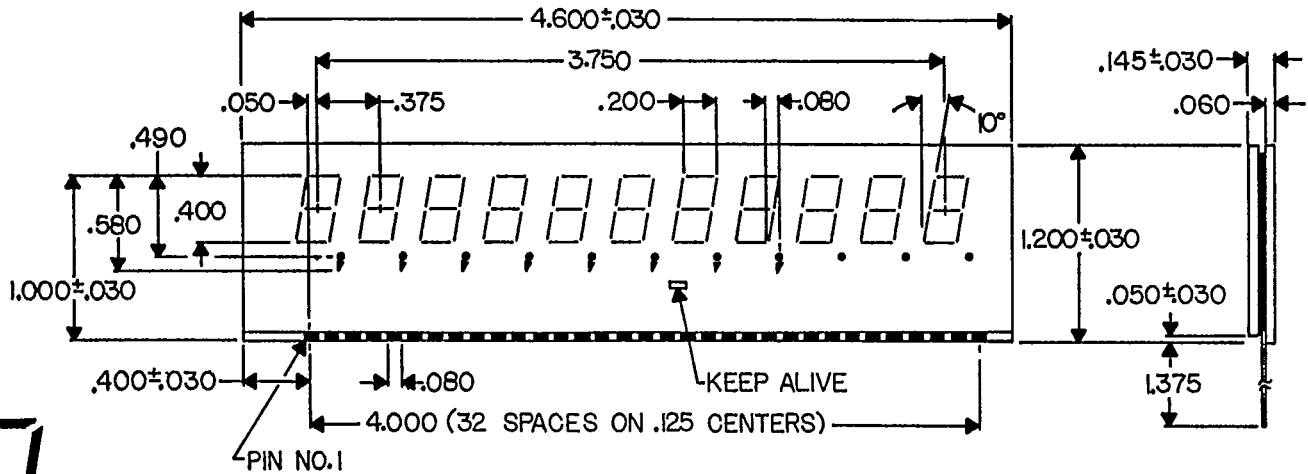


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## AR11400 - DIGITAL (.4 inch high) DISPLAYS

The Model AR11400 is an 11 digit display panel with decimal points and commas. It is a long life gas discharged, segmented display panel in sealed envelopes. This display has .40 inch high characters.



FONT DETAIL

This display is designed to be operated in a multiplexed mode where the cathode drive and decoder circuitry is time shared among all digits of the displays. Like cathode segments for all the digits are bussed.

### FEATURES

- All Glass Construction
- Minimal Connections
- 7 Segment Format
- Sunlight Readable
- High Reliability
- Completely Flat Design
- Neon Orange Color
- Excellent Contrast
- Wide Viewing Angle (140°)
- Thin Package (.3 inch)
- Low Power Consumption

### PIN OUT

PIN	FUNCTION	PIN	FUNCTION
1	F Segment Cathode	18	Anode - Keep Alive
2	Anode - 1st Digit on Left	19	Keep Alive Cathode
3	G Segment Cathode	20	Anode - 5th Digit from Right
4	Anode - 2nd Digit from Left	21	NC
5	E Segment Cathode	22	Anode - 4th Digit from Right
6	NC	23	NC
7	D Segment Cathode	24	NC
8	Anode - 3rd Digit from Left	25	Comma Cathode
9	NC	26	Anode - 3rd Digit from Right
10	Anode - 4th Digit from Left	27	Decimal Point Cathode
11	NC	28	Anode - 2nd Digit from Right
12	NC	29	C Segment Cathode
13	NC	30	NC
14	Anode - 5th Digit from Left	31	B Segment Cathode
15	NC	32	Anode - 1st Digit on Right
16	Anode - 6th Digit from Left	33	A Segment Cathode
17	NC		