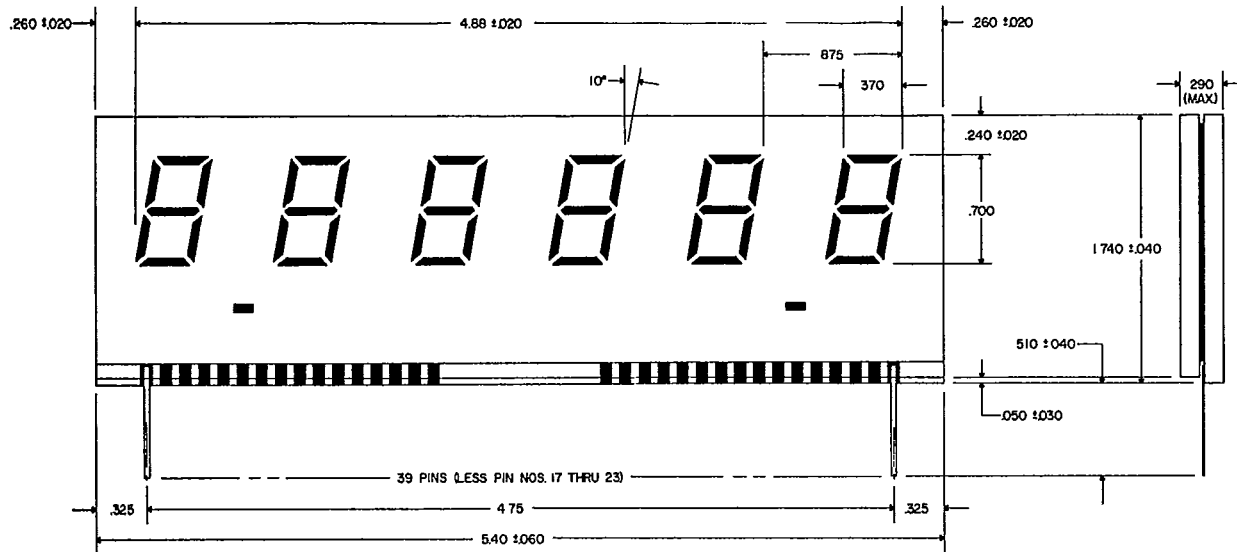




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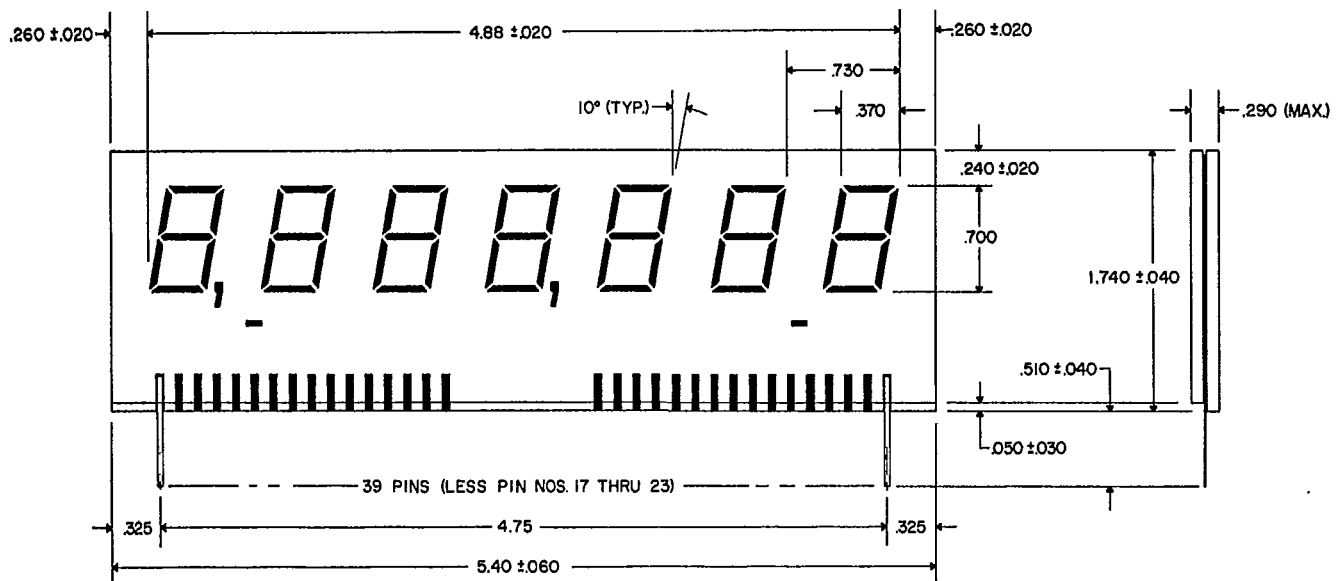
ARO6701 and ARO7700 - DIGITAL (.7 inch high) DISPLAYS



The model ARO6701 is a 6 digit display and the ARO7700 is a 7 digit display. Both are long life gas discharge, segmented display panels in sealed envelopes. These displays have .70 inch high characters and the ARO7700 has two commas included. These displays feature the following advantages:

- No derating of light output over the operating temperature range.
- Fixed leads permanently bonded to the panel.
- 7-segment format.
- Can be viewed comfortably from up to 30 feet.
- High brightness at low power.
- Uniform brightness between segments and digits.
- Neon orange color.

These displays are 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.



Electrical Characteristics at 25° C

Parameter	Units
Panel Voltage Drop	150 Vdc Typ.
(Notes 2, 6)	
Segment Current = 4.15 mA	
SKA Cathode Current = .09 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	4.15 mA
(Notes 4, 5)	
SKA Cathode Current	0.9mA
(Notes 4, 5)	
DCKA Cathode Current	0.14 mA
(Notes 4, 5)	
Peak Cathode Voltage	-190 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
Relonization Time	100 uS max.
(Note 13)	
Cathode Blanking Overlap	200 uS
(Note 14)	
Display Scan Period	17 mS
Panel Voltage Drop	150v

NOTES:

- Values beyond which the life of the device may be reduced.
- 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.
- Voltage referenced to anode on voltage.
- 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". AO.006" diameter optical pickup is focused on the center of the segment under test.
- The peak segment current is the value existing during the digit period.
- Typical waveforms are shown in Figure 2.
- Rise and fall times of anode address and cathode select signals shall be 1 us max. measured between 10% and 90% points.
- 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.
- Ionization time is measured with numeral "0" displayed in the rightmost with all other digits blanked.
- Non-significant zero blanking is permitted but one digit must always be energized.
- Digit period minus cathode blanking interval is the cathode on time.
- Relonization time is measured with all segments and digits displayed.
- Cathode blanking overlap is the interval between turn-off of anode for previous digit and turn-on of cathodes for next digits.

MODEL ARO6701

Pin Connections (Note 11)

Pin	Desig.	Pin	Desig.	Pin	Desig.
1	---	15	Anode 3	29	n/c
2	a	16	n/c	30	n/c
3	Anode 1	17	Anode 3	31	Anode 5
4	b	18	---	32	k/a Cathode
5	Anode 1	19	---	33	Anode 5
6	c	20	---	34	d
7	n/c	21	---	35	k/a Anode
8	n/c	22	---	36	e
9	Anode 2	23	---	37	Anode 6
10	n/c	24	---	38	g
11	n/c	25	Anode 4	39	Anode 6
12	n/c	26	n/c	40	f
13	Anode 2	27	Anode 4	41	---
14	n/c	28	n/c		

MODEL ARO7700

PIN CONNECTIONS (Note 11)

Pin	Desig.	Pin	Desig.	Pin	Desig.
1	Anode 1	15	n/c	29	n/c
2	Anode 1	16	Anode 4	30	Anode 6
3	b Cathode	17	No pin	31	Cathode k/a
4	Anode 1	18	No pin	32	Anode 6
5	c Cathode	19	No pin	33	d Cathode
6	Anode k/a	21	No pin	34	Anode k/a
7	Cathode k/a	21	No pin	35	e Cathode
8	Anode 2	22	No pin	36	Anode 7
9	n/c	23	No pin	37	g Cathode
10	Anode 2	24	Anode 4	38	Anode 7
11	n/c	25	n/c	39	f Cathode
12	Comma	26	Anode 5		

LEGEND

- A = Anode
- k/a = Keep Alive
- n/c = No Connection