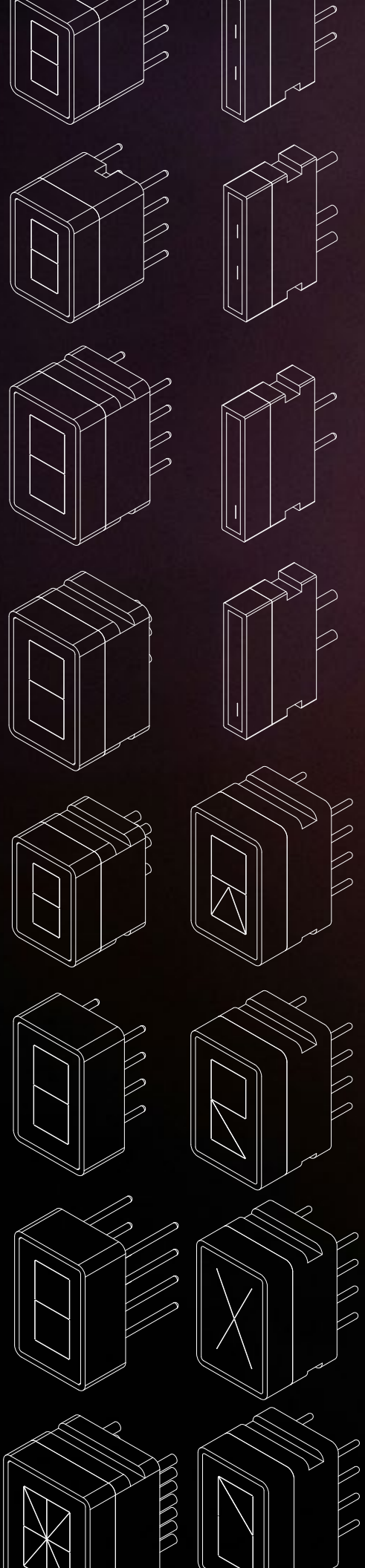




Incandescent Displays

▶ 2026 Catalog

wamco

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About Wamco Incandescent Displays

KW Series Direct View Filament (DVF) Displays

The Company

Wamco began in 1968 as a supplier of high quality sub miniature incandescent lamps to the Aerospace, computer and hi-rel electronics industries.

Today we are listed on the Federal Specification QPL and are a top supplier of subminiature incandescent lamps and DVF Displays to the Aerospace industry.

Wamco is noted for high quality products, quick response to new designs, excellent sales staff, and service which is backed by one of the largest lamp and DVF Display inventories in the world.

Wamco's KW DVF Displays were developed as a result of requests we received from our Aerospace customers to design a truly high quality sunlight readable display capable of withstanding the most rigorous of environments.

Superior Features of KW DVF Displays

Non-Crossed Filaments:

Eliminates potential of filaments accidentally touching (at the corners) during shock and vibration.

All Glass Package:

Increases reliability during temperature cycling because of the lack of dissimilar materials at the sealing seam of the face plate.

Larger Sealing Area:

Our proprietary sealing process has eliminated vacuum leaks as a major problem.

Special Filament Mounting Pads:

Character dimensions are held to a tolerance of plus/minus .015".

Higher Vacuum Level:

Guarantees a longer life and reduces the tungsten evaporation rate closer to the theoretical rate.

Greater Filament Strength:

Proprietary processing and heat treating of Wamco filaments permits them to withstand high shock and vibration environments.

Water Cycle Eliminated:

Special processing eliminates the outgassing of water molecules (a phenomena which begins at 100° C +) from the glass which attacks the tungsten filament and drastically reduces filament life.

Benefits

- Sunlight readable
- Low power
- Night vision goggle readable
- Wide viewing angle
- Directly replaceable to other DVF displays
- Multiplexing
- Impervious to salt spray and humidity
- Even brightness at rated and dimming voltages
- Long life
- Withstands temperature extremes
- Compact design
- Withstands transient voltages which damage solid state devices
- Compatible with LED display I.C. drivers
- Color filtering

Technical Information

Brightness

There are two methods of measuring the brightness of direct view filament displays. The first method yields candelas, and the second, foot- lamberts. Wamco uses the candela method. Candelas can be measured very accurately, and more importantly, the measurements have a high degree of repeatability. Candelas closely represent what the eye actually sees because it measures integrated light from all of the filament coils.

The history of measuring the brightness of filament displays in foot-lambert values has not offered a high degree of reliability. Accuracy is suspect and the repeatability of measurements is difficult. Foot-lambert measurements do not reflect what the eye sees because the photometer focuses on only a few filament coils. The only advantage of having foot-lambert values is to compare for equal brightness readouts of different sizes.

$$\text{Foot-lambert} = \frac{\text{Candela} \times \text{PL}}{\text{Lighted Area (Sq. Ft.)}}$$

Multiplexing

The rated pulse voltage is determined through the formula:

$$PV = \frac{\text{Rated Voltage}}{\sqrt{\text{Duty Cycle}}}$$

The pulse voltage is critical in terms of life and brightness as shown in the chart.

The recommended minimum frequency is 500 Hz. Large thermal swings begin to occur below 500 Hz, which can be detrimental to filament life and strength.

The recommended minimum frequency is subject to change as more data is obtained from our life testing program.

Voltage Chart

The chart below demonstrates the affect overrated and underrated voltages have on an incandescent filament display. The numbers were derived from the following formulas:

$$\text{Life Factor} = \left(\frac{\text{Rated Voltage}}{\text{Application Voltage}} \right)^{12}$$

$$\text{Brightness Factor} = \left(\frac{\text{Application Voltage}}{\text{Rated Voltage}} \right)^{3.5}$$

$$\text{Amperage Factor} = \left(\frac{\text{Application Voltage}}{\text{Rated Voltage}} \right)^{.55}$$

The 12th power law for life was established many years ago for large lamps with life ratings of 5000 hours or less. It is considered to be only fairly accurate from 95% to 110% of rated voltage.

Since our displays have a theoretical life rating of over 5000 hours, this chart should only be used as a guide to show the sensitivity of lamp life to over and under voltage operation. This chart should not be used to obtain actual life.



% Rated Voltage	% Rated Amperage	% Rated Brightness	% Rated Life
95	97.2	83.6	185.1
96	97.8	86.7	163.2
97	98.3	89.9	144.1
98	98.9	93.2	127.4
99	99.4	96.5	112.8
100	100	100	100
101	100.5	103.5	88.7
102	101.1	107.2	78.8
103	101.6	110.9	70.1
104	102.2	114.7	62.5
105	102.7	118.6	55.7
106	103.3	122.6	49.7
107	103.8	126.7	44.4
108	104.3	130.9	39.7
109	104.9	135.2	35.6
110	105.4	139.6	31.9

Technical Information

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Quality Control

- Production lots coded for traceability.
- 100% aging 32 hours before shipment
- 100% brightness measurement at rated voltage and 100% visual inspection for brightness at dimmed voltage.
- 100% selected for current draw.
- 100% production lots are sample tested to general inspection level "I"; 1.0 AQL.

Accelerated Life Test

This procedure is not recommended. Filaments are designed to be operated at rated voltages.

Life Specification

The only practical method for determining the life of "long life" incandescents is through calculations based on the tungsten evaporation rate. Theoretical life ratings assume perfect conditions and does not consider DC notching, Sorret effect, series operation or improper multiplexing. These conditions may reduce the theoretical life by as much as 70%.

Night-Vision Goggle Specification

When used with the proper NVG filter, KW Series readouts meet these NVG specifications:

- MIL-L-85762A N/R and color
- MIL-STD-3009 N/R and color
- US Army secure lighting energy ratios
- United Kingdom Green/Red ratio

Environmental Characteristics

Operating Temperature Range:

-55°C to 100° C

Storage Temperature Range:

-65° C to 125° C

Thermal Shock

Meets requirement of MIL-STD-202, Method 107D, Test condition B, (-65° C thru 126° C)

Vibration

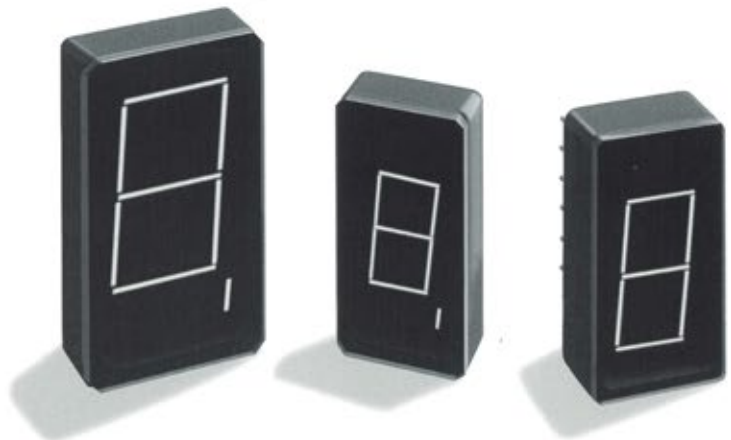
Meets requirements of MIL-STD-202, Method 204C, Test condition C (Except 5G)

Shock

Meets requirements of MIL-STD-202, Method 213B, Test condition G

Seal

Meets requirements of MIL-STD-202, Method 112A, Test condition A

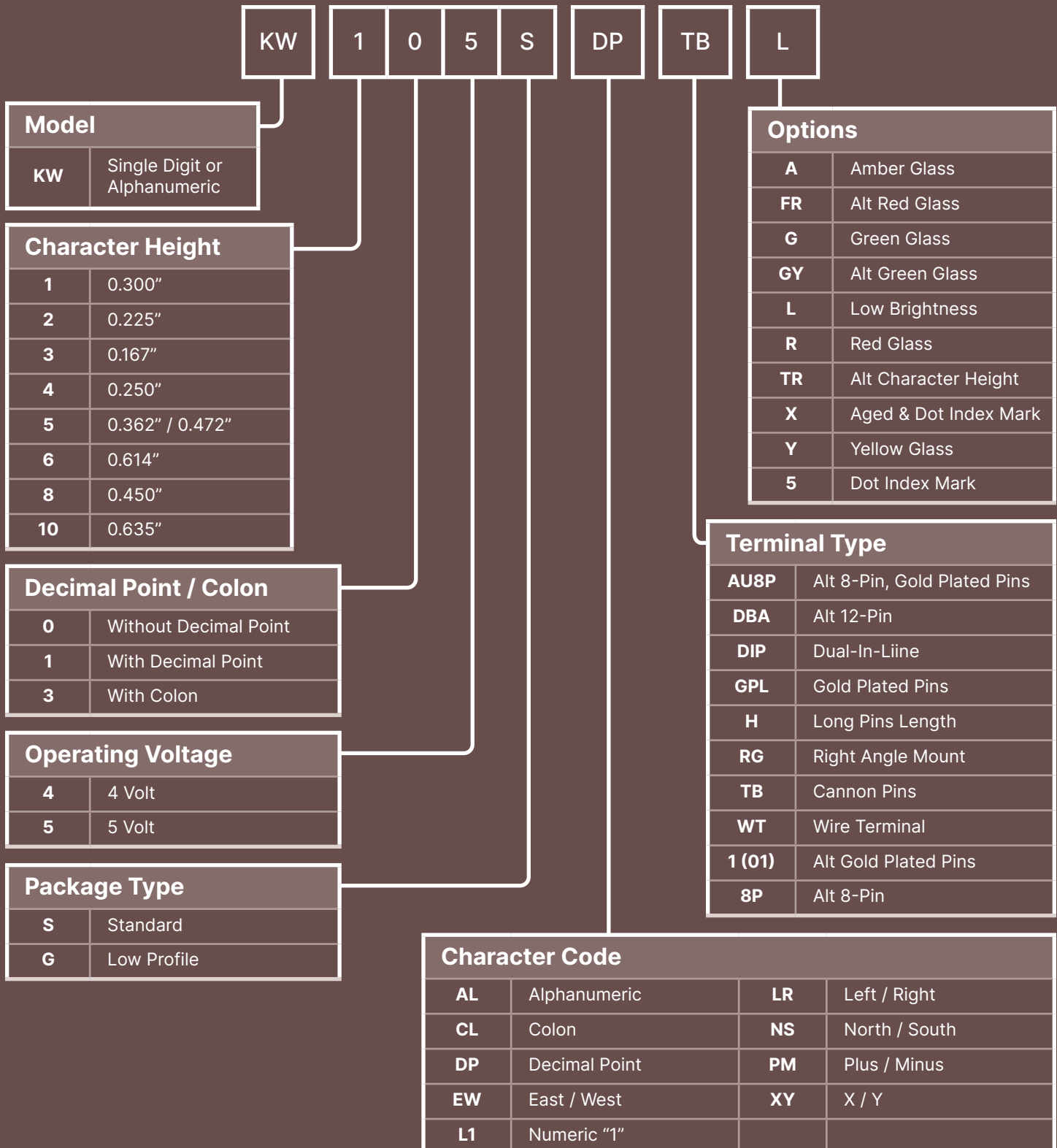


KW Part Family

Single Unit Displays

Ordering Information

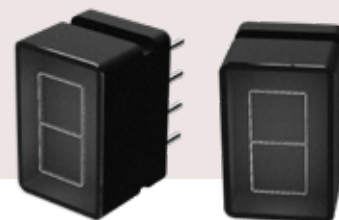
KW Part Family



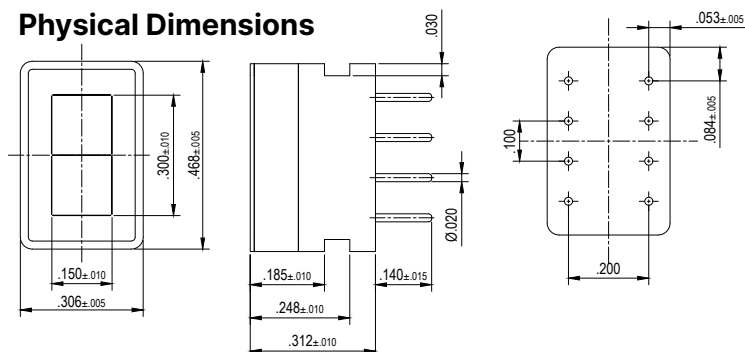
100 Series

Digit, Standard

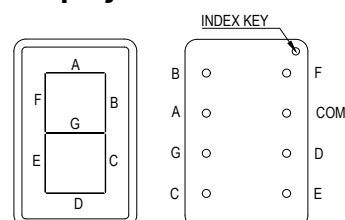
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Physical Dimensions



Display Pinout

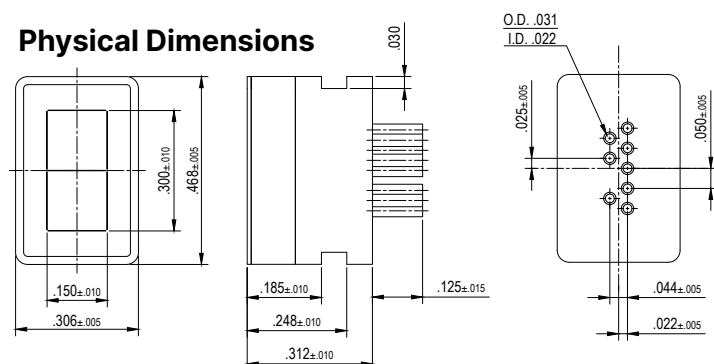


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.312	7 Segment
KW 104S-8P*	Digit	4	15 ± 2	-	33 ± 7	0.308	0.155	0.468	0.306	0.295	7 Segment, ALT 8-Pin
KW 104S-AU8P*	Digit	4	15 ± 2	-	33 ± 7	0.308	0.155	0.468	0.306	0.295	7 Segment, ALT 8-Pin, Gold Plated Leads
KW 104S-G	Digit	4	15 ± 2	-	44 ± 8†	0.300	0.155	0.468	0.306	0.312	7 Segment, Green Glass
KW 104S-GPL	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.312	7 Segment, Gold Plated Leads
KW 105S	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.312	7 Segment
KW 105S-GPL	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.312	7 Segment, Gold Plated Leads
KW 105S-TR*	Digit	5	13 ± 2	-	52.5 ± 9.5	0.311	0.155	0.468	0.306	0.312	7 Segment, .311" Char Height

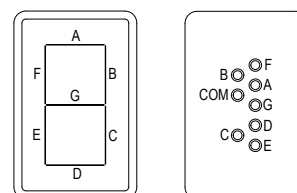
*Dimensions differ from the above drawing, contact Wamco for detailed drawing

†Millicandela rating for clear glass; colored glass yields lower brightness

Physical Dimensions



Display Pinout

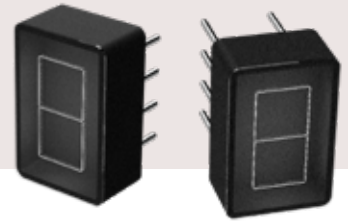


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-TB	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.312	7 Segment, Cannon Pins
KW 105S-TB	Digit	5	13 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.312	7 Segment, Cannon Pins
KW 105S-TB/L	Digit	5	13 ± 2	-	23 ± 5	0.300	0.155	0.468	0.306	0.312	7 Segment, Cannon Pins, Low Brightness

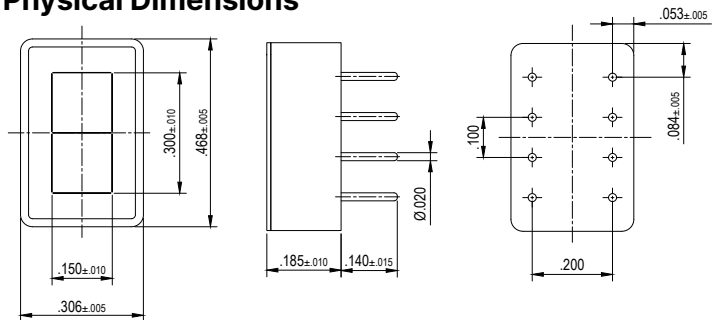
100 Series

Digit, Low Profile

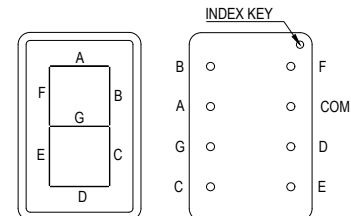
wamco



Physical Dimensions

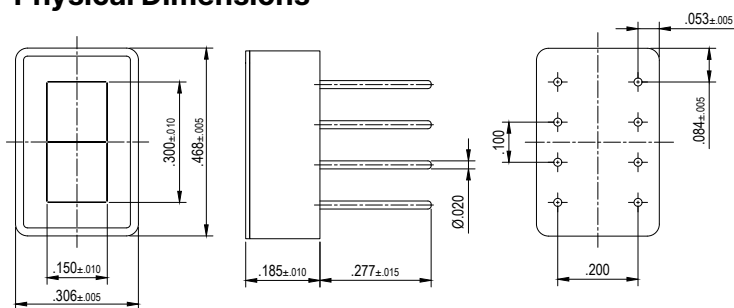


Display Pinout

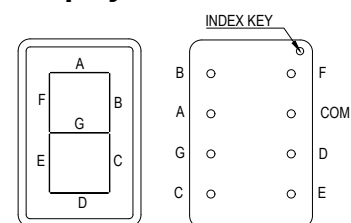


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104G	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.185	7 Segment, Low Profile
KW 105G	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.185	7 Segment, Low Profile

Physical Dimensions



Display Pinout

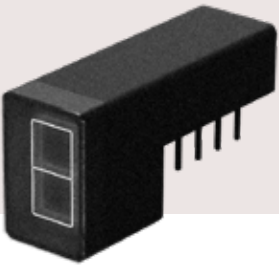


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104GH	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.185	7 Segment, Low Profile, Long Pin Length
KW 105GH	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.185	7 Segment, Low Profile, Long Pin Length

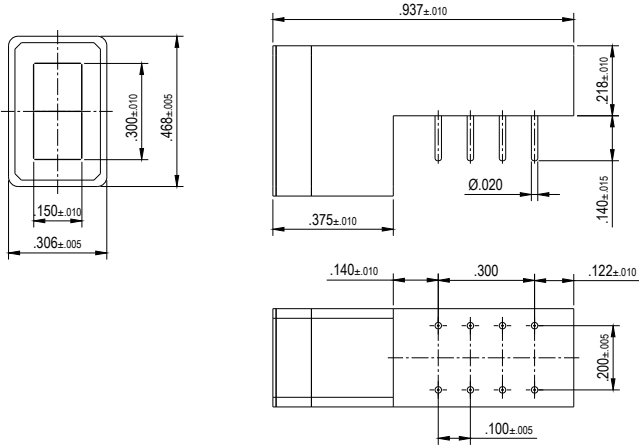
100 Series

Digit, Right Angle Mount

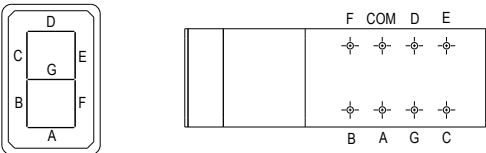
wamco



Physical Dimensions



Display Pinout

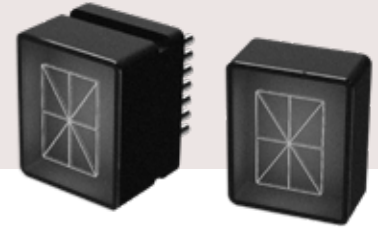


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104RG	Digit	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.937	7 Segment, Right Angle Mount
KW 105RG	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.937	7 Segment, Right Angle Mount

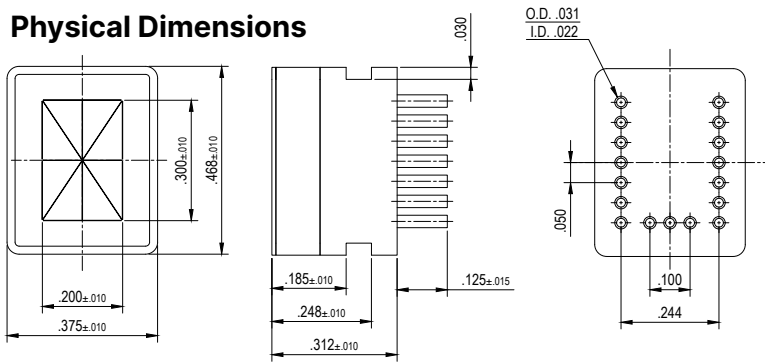
100 Series

Alphanumeric

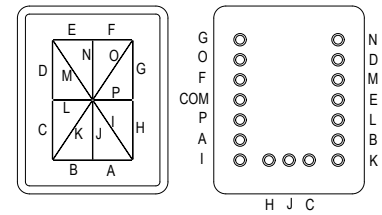
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Physical Dimensions

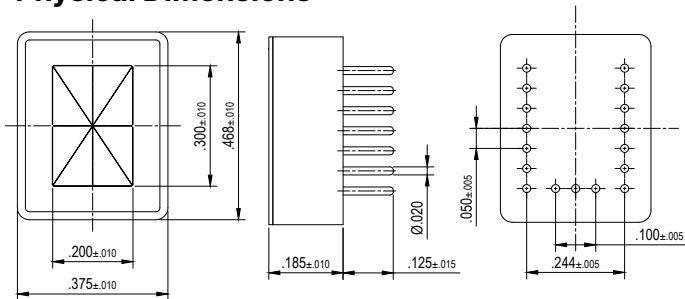


Display Pinout

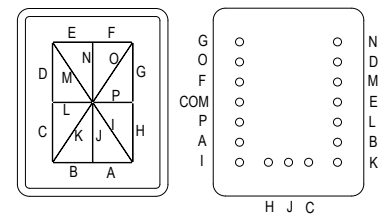


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104AL	Alphanumeric	4	15 ± 2	-	90 ± 20	0.300	0.200	0.468	0.375	0.312	16 Segment
KW 105AL	Alphanumeric	5	15 ± 2	-	109 ± 23	0.300	0.200	0.468	0.375	0.312	16 Segment

Physical Dimensions



Display Pinout

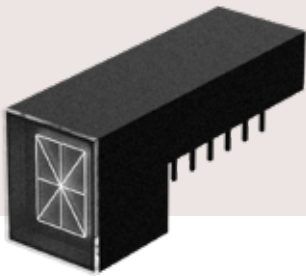


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 105G-AL	Alphanumeric	5	15 ± 2	-	109 ± 23	0.300	0.200	0.468	0.375	0.185	16 Segment, Low Profile

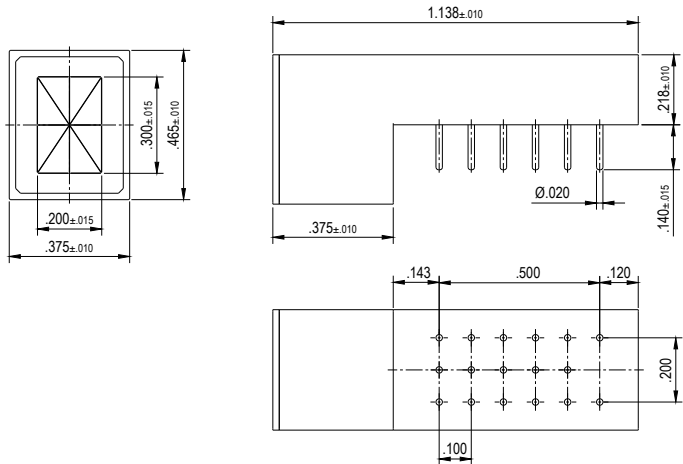
100 Series

Alphanumeric, Right Angle Mount

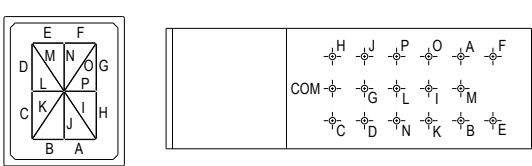
wamco



Physical Dimensions



Display Pinout

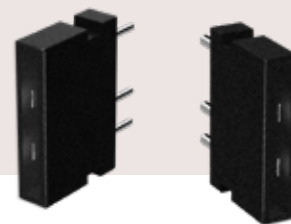


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104AL-RG	Alphanumeric	4	15 ± 2	-	90 ± 20	0.300	0.200	0.468	0.375	1.138	16 Segment, Right Angle Mount
KW 105AL-RG	Alphanumeric	5	15 ± 2	-	109 ± 23	0.300	0.200	0.468	0.375	1.138	16 Segment, Right Angle Mount

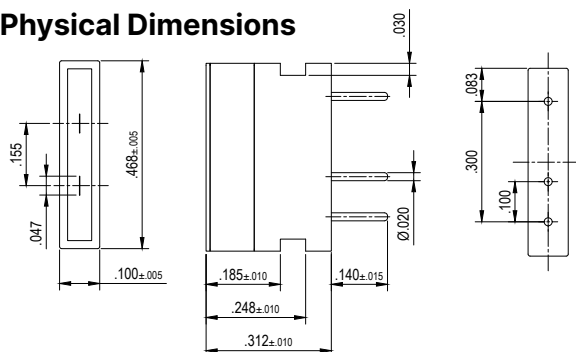
100 Series

Colon

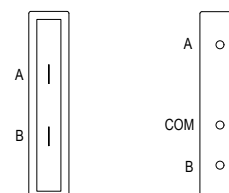
wamco



Physical Dimensions

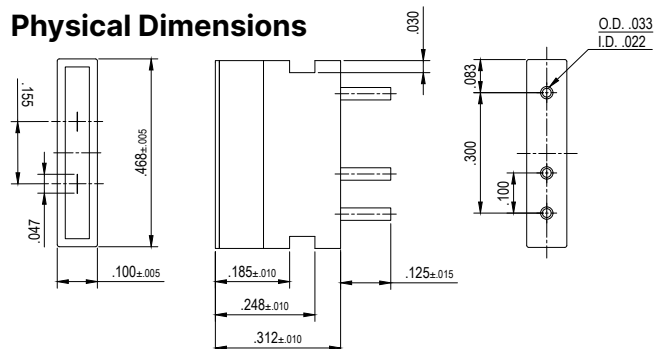


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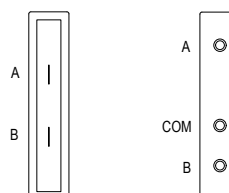


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-CL	Colon	4	13 ± 2	-	7 ± 3.4	0.047	-	0.468	0.100	0.312	2 Segment
KW 105S-CL	Colon	5	13 ± 2	-	8.4 ± 4.0	0.047	-	0.468	0.100	0.312	2 Segment
KW 105S-CL-GPL	Colon	5	13 ± 2	-	8.4 ± 4.0	0.047	-	0.468	0.100	0.312	2 Segment, Gold Plated Leads

Physical Dimensions



Display Pinout

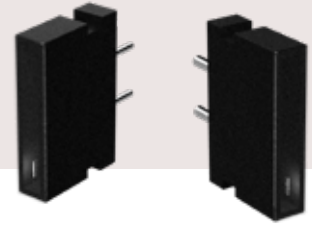


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-CL-TB	Colon	4	13 ± 2	-	7 ± 3.4	0.047	-	0.468	0.100	0.312	2 Segment, Cannon Pins
KW 105S-CL-TB	Colon	5	13 ± 2	-	8.4 ± 4.0	0.047	-	0.468	0.100	0.312	2 Segment, Cannon Pins
KW 105S-CL-TB/L	Colon	5	13 ± 2	-	[3.7]	0.047	-	0.468	0.100	0.312	2 Segment, Cannon Pins, Low Brightness

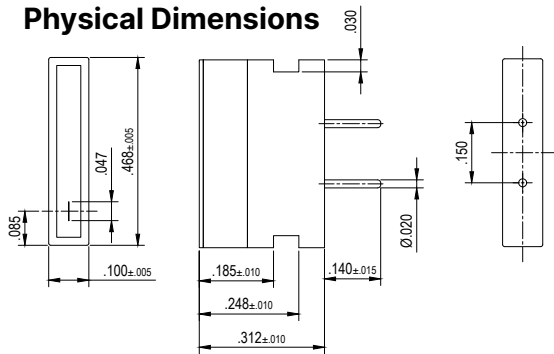
100 Series

Decimal Point

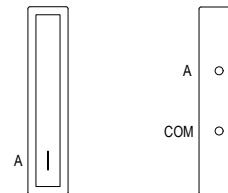
wamco



Physical Dimensions

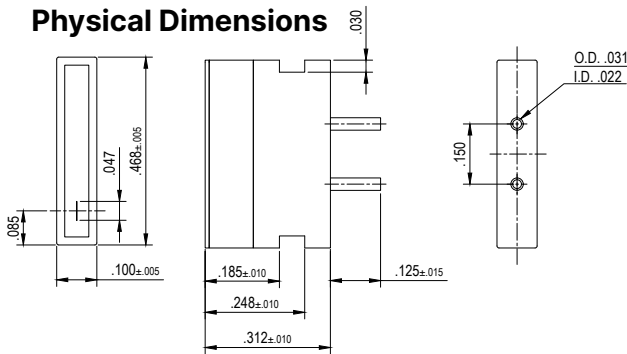


Display Pinout

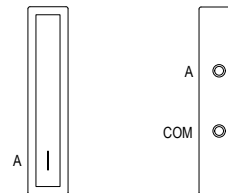


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-DP	Decimal Point	4	13 ± 2	-	3.5 ± 1.7	0.047	-	0.468	0.100	0.312	1 Segment
KW 104S-DP-GPL	Decimal Point	4	13 ± 2	-	3.5 ± 1.7	0.047	-	0.468	0.100	0.312	1 Segment, Gold Plated Leads
KW 105S-DP	Decimal Point	5	13 ± 2	-	4.2 ± 2.0	0.047	-	0.468	0.100	0.312	1 Segment
KW 105S-DP-GPL	Decimal Point	5	13 ± 2	-	4.2 ± 2.0	0.047	-	0.468	0.100	0.312	1 Segment, Gold Plated Leads

Physical Dimensions



Display Pinout

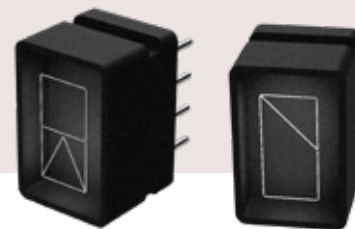


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-DP-TB	Decimal Point	4	13 ± 2	-	3.5 ± 1.7	0.047	-	0.468	0.100	0.312	1 Segment, Cannon Pins
KW 105S-DP-TB	Decimal Point	5	13 ± 2	-	4.2 ± 2.0	0.047	-	0.468	0.100	0.312	1 Segment, Cannon Pins
KW 105S-DP-TB-L	Decimal Point	5	13 ± 2	-	[1.8]	0.047	-	0.468	0.100	0.312	1 Segment, Cannon Pins, Low Brightness

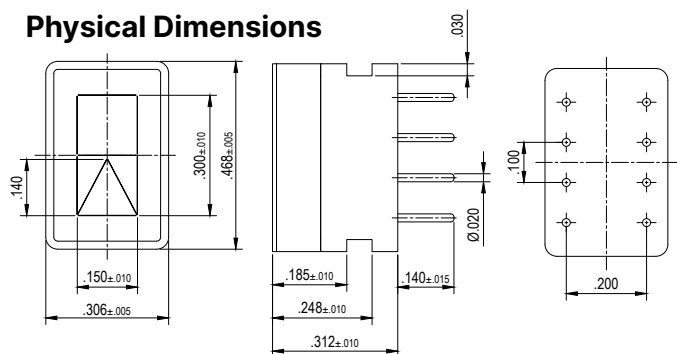
100 Series

Directional

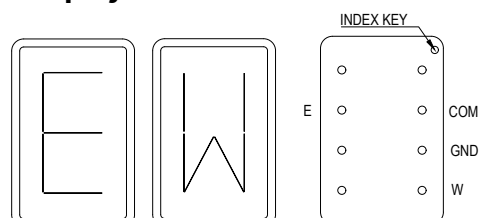
wamco



Physical Dimensions



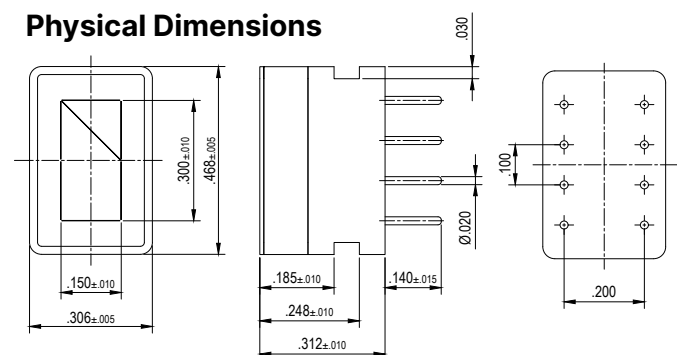
Display Pinout



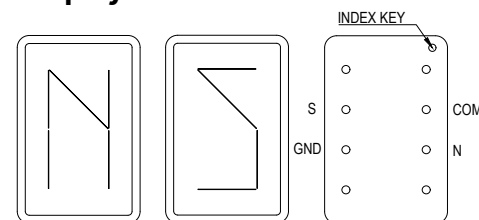
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-EW	East/West	4	15 ± 2	-	55 ± 10	0.300	0.155	0.468	0.306	0.312	9 Segment
KW 104S-EW-8P*	East/West	4	15 ± 2	-	52 ± 10	0.308	0.155	0.468	0.306	0.295	9 Segment, ALT 8-Pin
KW 105S-EW	East/West	5	15 ± 2	-	67 ± 13	0.300	0.155	0.468	0.306	0.312	9 Segment

*Dimensions differ from the above drawing, contact Wamco for detailed drawing

Physical Dimensions



Display Pinout



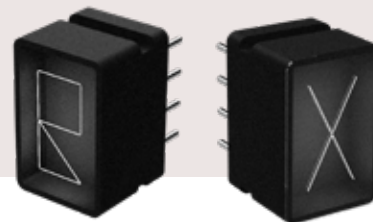
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-NS	North/South	4	15 ± 2	-	44 ± 8	0.300	0.155	0.468	0.306	0.312	7 Segment
KW 104S-NS-8P*	North/South	4	15 ± 2	-	46 ± 9	0.308	0.155	0.468	0.306	0.295	7 Segment, ALT 8-Pin
KW 104S-NS-AU8P*	North/South	4	15 ± 2	-	46 ± 9	0.308	0.155	0.468	0.306	0.295	7 Segment, ALT 8-Pin, Gold Plated Leads
KW 105S-NS	North/South	5	15 ± 2	-	52.5 ± 9.5	0.300	0.155	0.468	0.306	0.312	7 Segment

*Dimensions differ from the above drawing, contact Wamco for detailed drawing

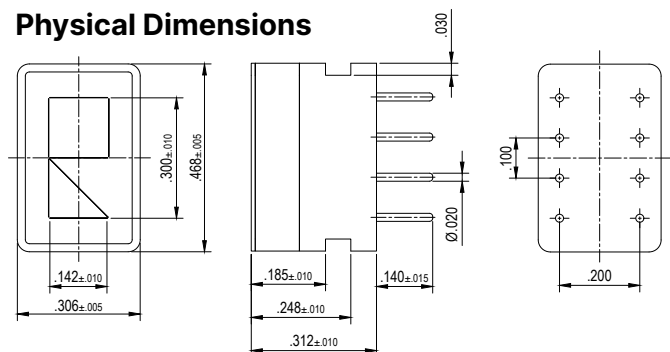
100 Series

Directional

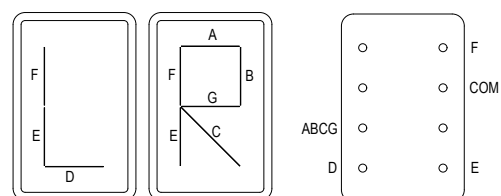
wamco



Physical Dimensions

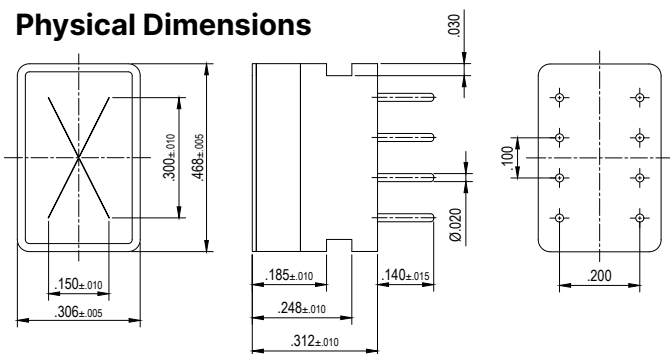


Display Pinout

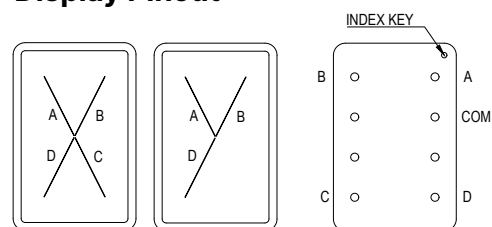


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-LR	Left/Right	4	15 ± 2	-	44 ± 8	0.300	0.142	0.468	0.306	0.312	7 Segment
KW 105S-LR	Left/Right	5	15 ± 2	-	52.5 ± 9.5	0.300	0.142	0.468	0.306	0.312	7 Segment

Physical Dimensions



Display Pinout

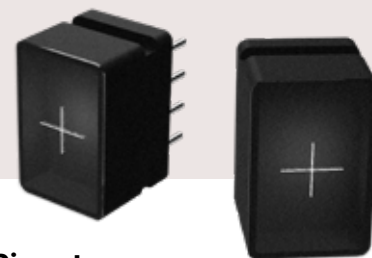


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-XY	X/Y	4	15 ± 2	-	25 ± 6	0.300	0.150	0.468	0.306	0.312	4 Segment
KW 105S-XY	X/Y	5	15 ± 2	-	30 ± 6	0.300	0.150	0.468	0.306	0.312	4 Segment

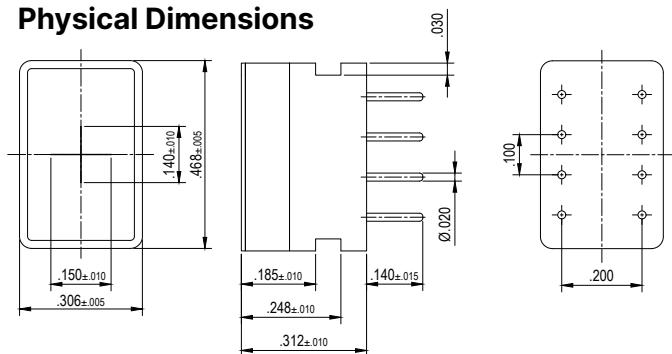
100 Series

Plus / Minus

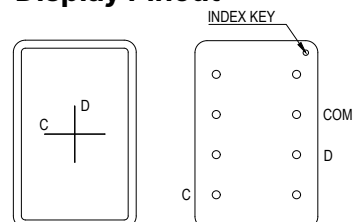
wamco



Physical Dimensions

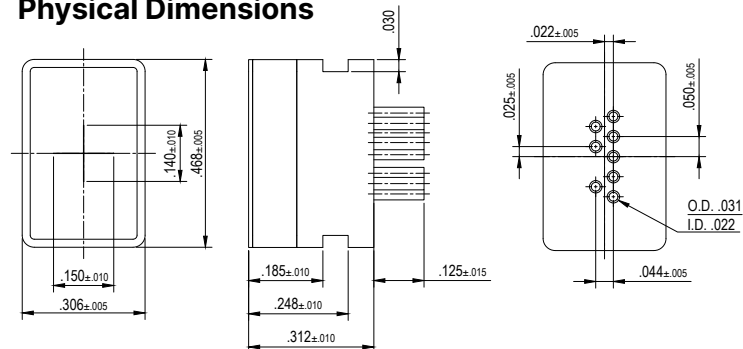


Display Pinout

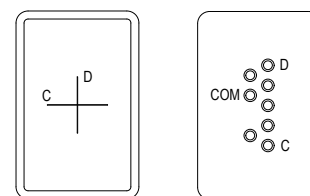


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-PM	Plus/Minus	4	15 ± 2	-	13 ± 3	0.140	0.150	0.468	0.306	0.312	2 Segment
KW 105S-PM	Plus/Minus	5	15 ± 2	-	15 ± 3	0.140	0.150	0.468	0.306	0.312	2 Segment

Physical Dimensions



Display Pinout

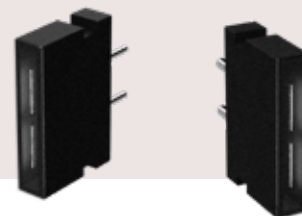


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-PM-TB	Plus/Minus	4	15 ± 2	-	13 ± 3	0.140	0.150	0.468	0.306	0.312	2 Segment, Cannon Pins

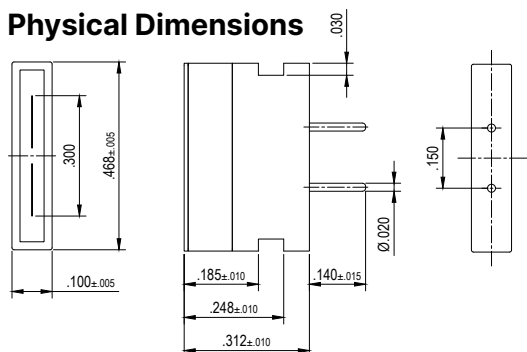
100 Series

Numeric 1

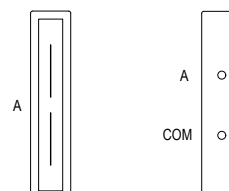
wamco



Physical Dimensions

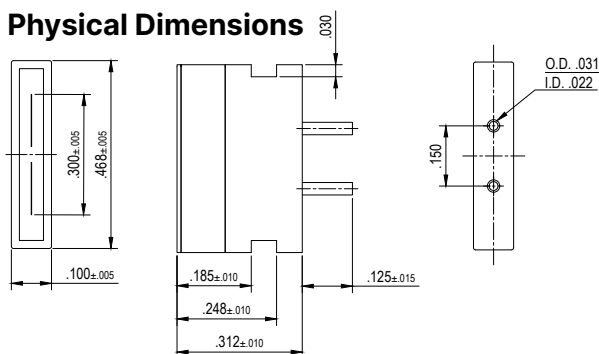


Display Pinout

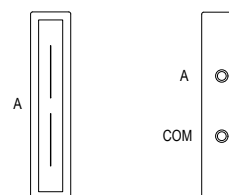


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-L1	Numeric 1	4	15 ± 2	-	13 ± 3	0.300	-	0.468	0.100	0.312	2 Segment
KW 105S-L1	Numeric 1	5	15 ± 2	-	15 ± 3	0.300	-	0.468	0.100	0.312	2 Segment

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104S-L1-TB	Numeric 1	4	15 ± 2	-	13 ± 3	0.300	-	0.468	0.100	0.312	2 Segment, Cannon Pins
KW 105S-L1-TB	Numeric 1	5	15 ± 2	-	15 ± 3	0.300	-	0.468	0.100	0.312	2 Segment, Cannon Pins

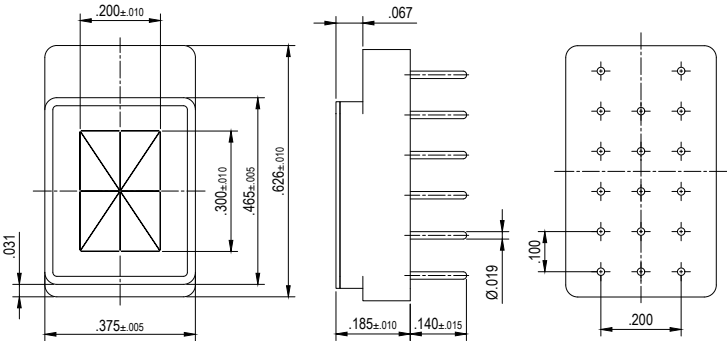
100G DIP Series

Dual In-Line Package, Alphanumeric

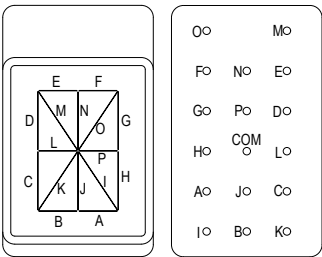
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104G-AL-DIP	Alphanumeric	4	15 ± 2	-	90 ± 20	0.300	0.200	0.626	0.375	0.185	16 Segment, ALT Package Size
KW 105G-AL-DIP	Alphanumeric	5	15 ± 2	-	109 ± 23	0.300	0.200	0.626	0.375	0.185	16 Segment, ALT Package Size

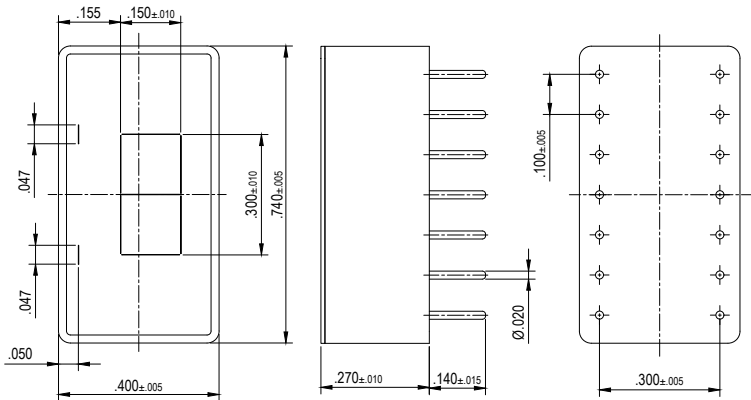
100G DIP Series

Dual In-Line Package, Digit

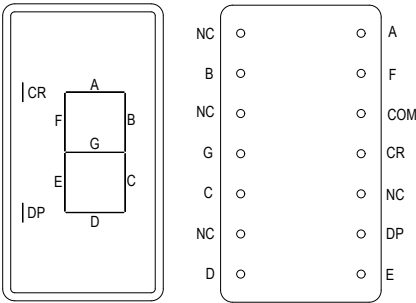
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104G-DIP	Digit	4	15 ± 2	-	44 ± 8	0.300	0.150	0.740	0.400	0.270	7 Segment
KW 105G-DIP	Digit	5	15 ± 2	-	52.5 ± 9.5*	0.300	0.150	0.740	0.400	0.270	7 Segment

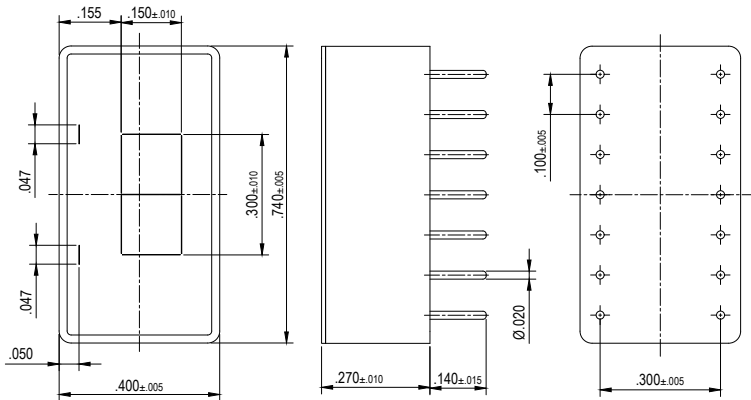
100G DIP Series

Dual In-Line Package, Digit with Colon

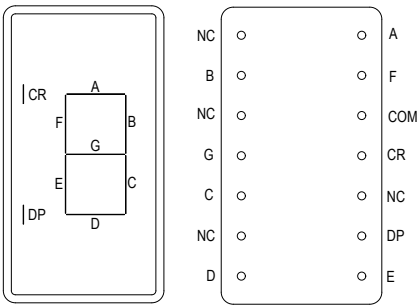
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 134G-DIP	Digit w/Colon	4	15 ± 2	13 ± 2	44 ± 8*	0.300	0.150	0.740	0.400	0.270	7 Segment with Colon
KW 135G-DIP	Digit w/Colon	5	15 ± 2	13 ± 2	52.5 ± 9.5*	0.300	0.150	0.740	0.400	0.270	7 Segment with Colon

*Millicandela rating does not include decimal point or colon

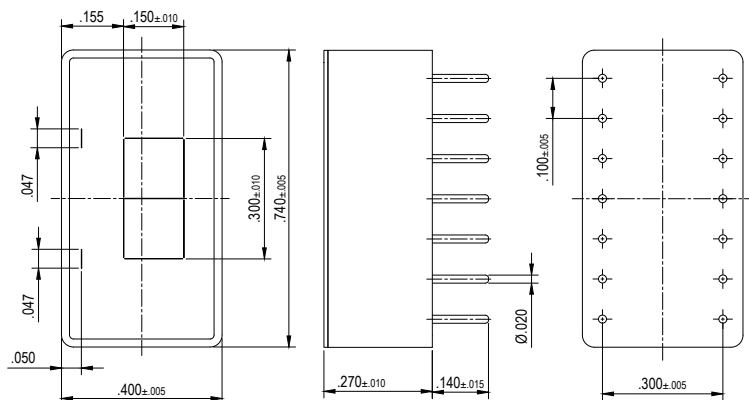
100G DIP Series

wamco

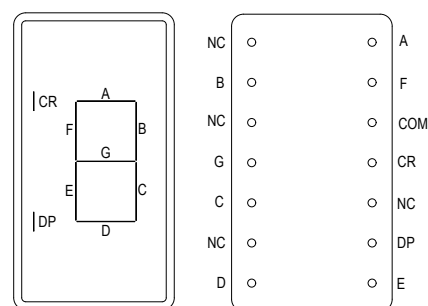
Dual In-Line Package, Digit with Decimal Point



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 114G-DIP	Digit with Decimal Point	4	15 ± 2	13 ± 2	44 ± 8*	0.300	0.150	0.740	0.400	0.270	7 Segment with D.P.
KW 115G-DIP	Digit with Decimal Point	5	15 ± 2	13 ± 2	52.5 ± 9.5*	0.300	0.150	0.740	0.400	0.270	7 Segment with D.P.
KW 115G-DIP-DBA [†]	Digit with Decimal Point	5	15 ± 2	13 ± 2	52.5 ± 9.5*	0.300	0.150	0.740	0.400	0.270	7 Segment with D.P., ALT 12-Pin

*Millicandela rating does not include decimal point or colon

[†]Dimensions differ from the above drawing, contact Wamco for detailed drawing

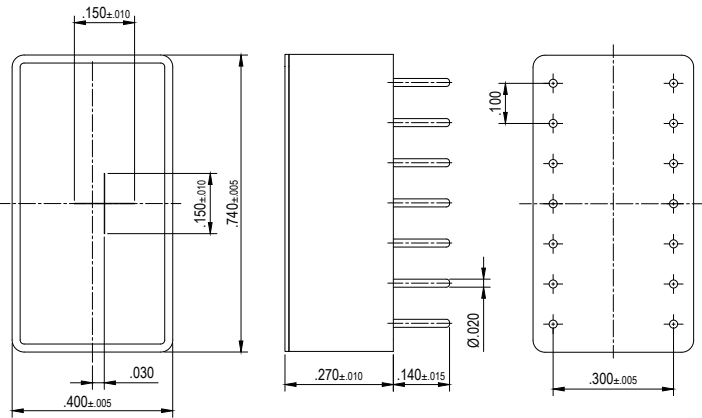
100G DIP Series

Dual In-Line Package, Plus / Minus

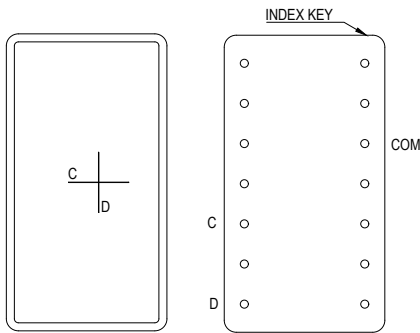
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 104G-PM-DIP	Plus/Minus	4	15 ± 2	-	13 ± 3	0.150	0.150	0.740	0.400	0.270	2 Segment
KW 105G-PM-DIP	Plus/Minus	5	15 ± 3	-	15 ± 3	0.150	0.150	0.740	0.400	0.270	2 Segment
KW 105G-PM-DIP-DBA*	Plus/Minus	5	15 ± 3	-	15 ± 3	0.150	0.150	0.740	0.400	0.270	2 Segment, ALT 12-Pin

*Dimensions differ from the above drawing, contact Wamco for detailed drawing

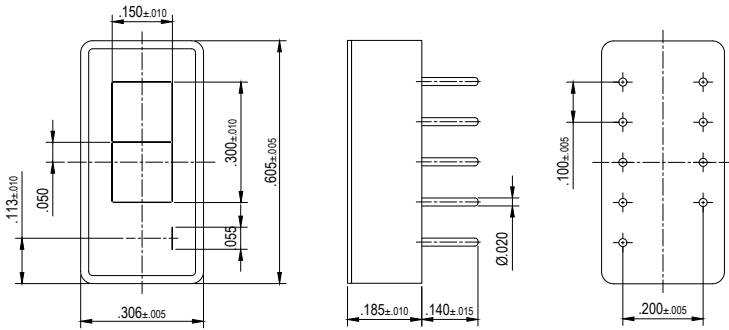
110G Series

Digit with Decimal Point

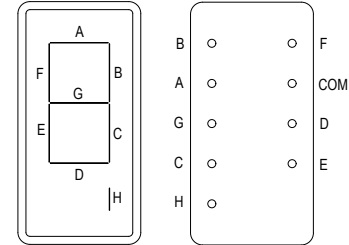
wamco



Physical Dimensions



Display Pinout



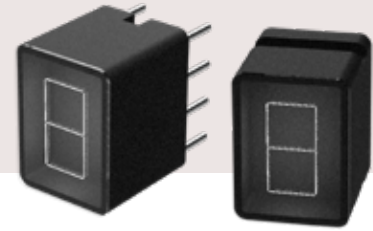
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 114G	Digit with Decimal Point	4	15 ± 2	13 ± 2	44 ± 8*	0.300	0.155	0.605	0.306	0.185	7 Seg. with D.P., Low Profile
KW 115G	Digit with Decimal Point	5	15 ± 2	13 ± 2	52.5 ± 9.5*	0.300	0.155	0.605	0.306	0.185	7 Seg. with D.P., Low Profile

*Millicandela rating does not include decimal point or colon

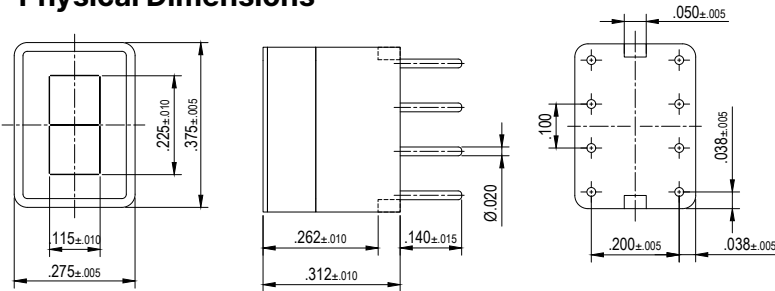
200 Series

Digit, Standard

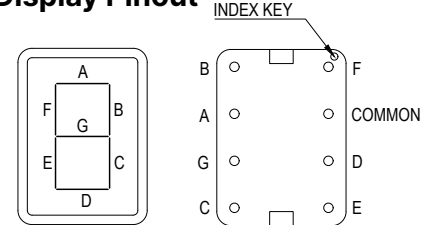
wamco



Physical Dimensions



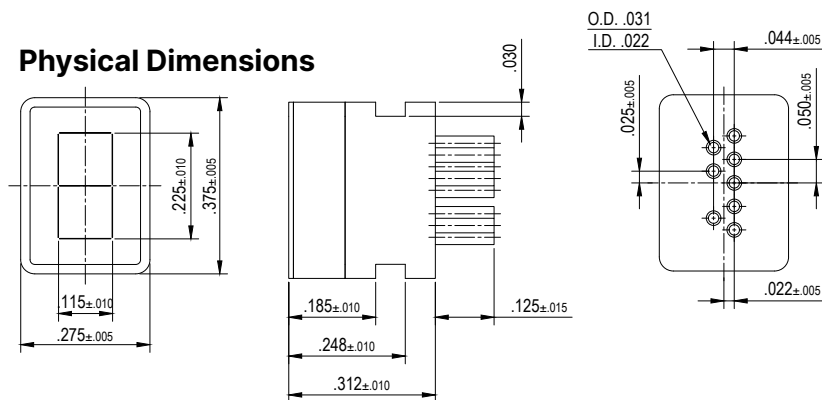
Display Pinout



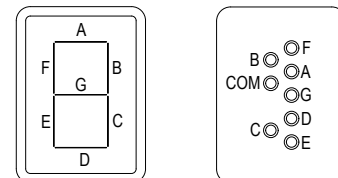
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S	Digit	4	14 ± 2	-	33 ± 7	0.225	0.115	0.375	0.275	0.312	7 Segment
KW 204S-GPL	Digit	4	14 ± 2	-	33 ± 7	0.225	0.115	0.375	0.275	0.312	7 Segment, Gold Plated Leads
KW 205S	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment
KW 205S-5	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment, Index Mark
KW 205S-A	Digit	5	12 ± 2	-	40 ± 6*	0.225	0.115	0.375	0.275	0.312	7 Segment, Amber Glass
KW 205S-G	Digit	5	12 ± 2	-	40 ± 6*	0.225	0.115	0.375	0.275	0.312	7 Segment, Green Glass
KW 205S-GPL	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment, Gold Plated Leads
KW 205S-X	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment, Aged

*Millicandela rating for clear glass; colored glass yields lower brightness

Physical Dimensions



Display Pinout



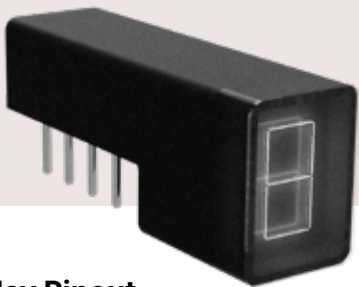
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-TB	Digit	4	14 ± 2	-	33 ± 7	0.225	0.115	0.375	0.275	0.312	7 Segment, Cannon Pins
KW 205S-TB	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment, Cannon Pins
KW 205S-TB-Y	Digit	5	12 ± 2	-	40 ± 6*	0.225	0.115	0.375	0.275	0.312	7 Segment, Cannon Pins, Yellow Glass

*Millicandela rating for clear glass; colored glass yields lower brightness

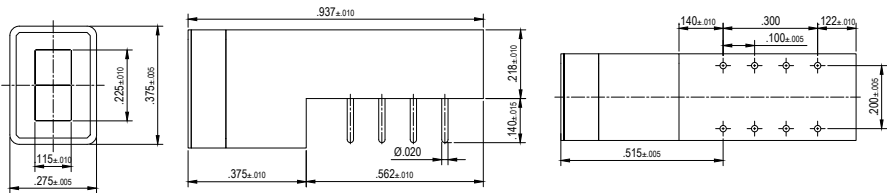
200 Series

Digit, Right Angle Mount

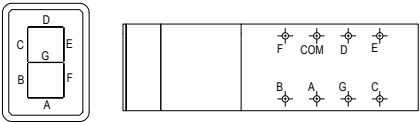
wamco



Physical Dimensions



Display Pinout

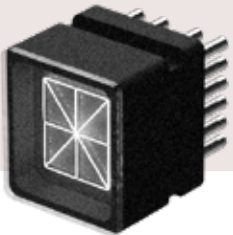


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 205RG	Digit	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.937	7 Segment, Right Angle Mount

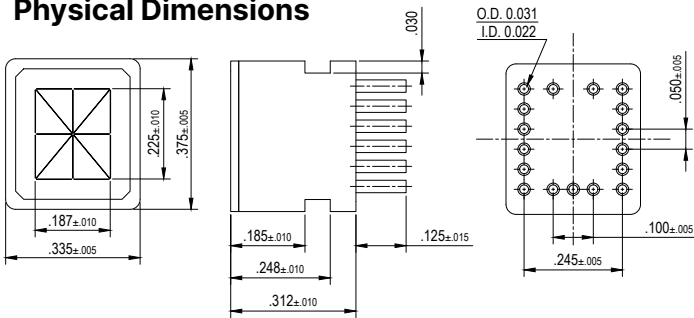
200 Series

Alphanumeric

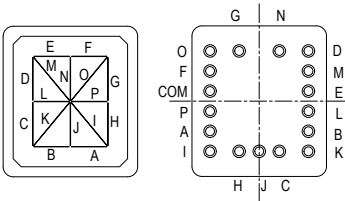
wamco



Physical Dimensions



Display Pinout

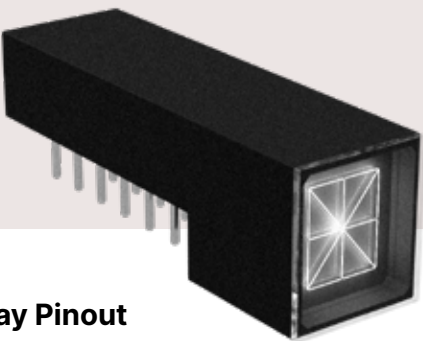


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204AL	Alphanumeric	4	14 ± 2	-	75 ± 15	0.225	0.187	0.375	0.335	0.312	16 Segment
KW 205AL	Alphanumeric	5	12 ± 2	-	89 ± 16	0.225	0.187	0.375	0.335	0.312	16 Segment

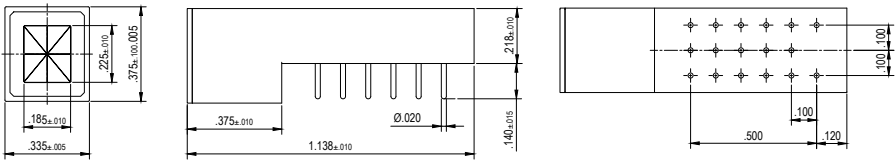
200 Series

Alphanumeric, Right Angle Mount

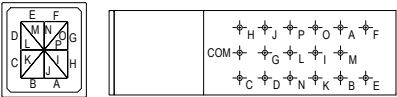
wamco



Physical Dimensions



Display Pinout

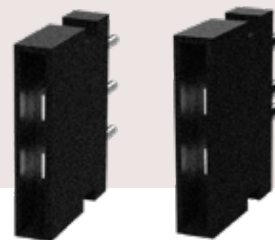


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204AL-RG	Alphanumeric	4	14 ± 2	-	75 ± 15	0.225	0.187	0.375	0.335	1.138	16 Segment, Right Angle Mount
KW 205AL-RG	Alphanumeric	5	12 ± 2	-	89 ± 16	0.225	0.187	0.375	0.335	1.138	16 Segment, Right Angle Mount

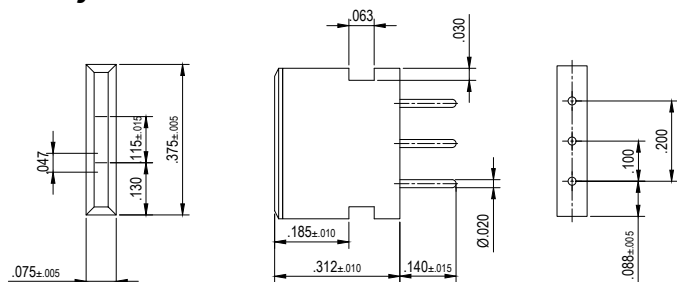
200 Series

Colon

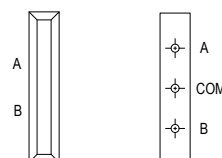
wamco



Physical Dimensions

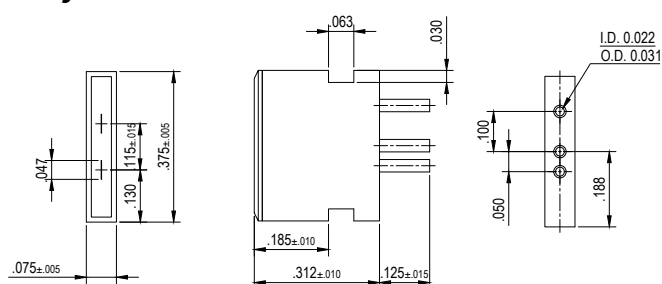


Display Pinout

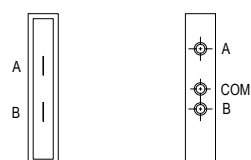


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-CL	Colon	4	10 ± 1.5	-	5.4 ± 2.8	0.047	-	0.375	0.075	0.312	2 Segment
KW 205S-CL	Colon	5	10 ± 1.5	-	6.4 ± 3.2	0.047	-	0.375	0.075	0.312	2 Segment

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-CL-TB	Colon	4	10 ± 1.5	-	5.4 ± 2.8	0.047	-	0.375	0.075	0.312	2 Segment, Cannon Pins
KW 205S-CL-TB	Colon	5	10 ± 1.5	-	6.4 ± 3.2	0.047	-	0.375	0.075	0.312	2 Segment, Cannon Pins

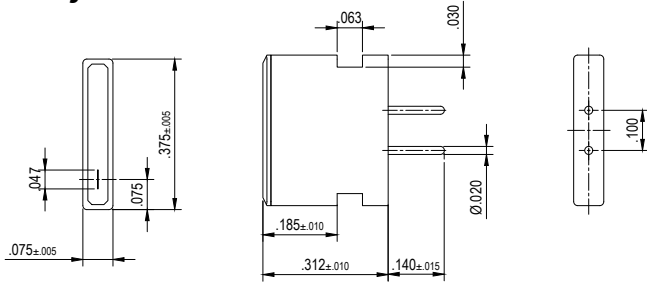
200 Series

Decimal Point

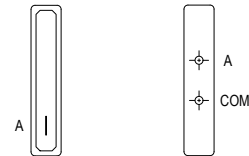
wamco



Physical Dimensions

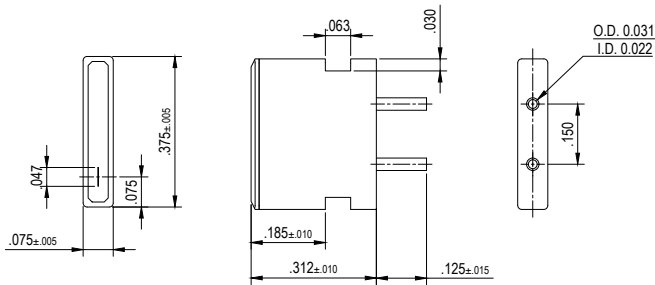


Display Pinout

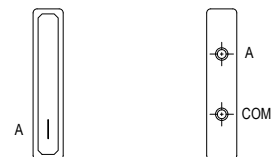


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-DP	Decimal Point	4	10 ± 1.5	-	2.7 ± 1.4	0.047	-	0.375	0.075	0.312	1 Segment
KW 204S-DP-1	Decimal Point	4	10 ± 1.5	-	2.7 ± 1.4	0.047	-	0.375	0.075	0.312	1 Segment, .150" Pin Spacing, Gold Plated Leads
KW 204S-DP-GPL	Decimal Point	4	10 ± 1.5	-	2.7 ± 1.4	0.047	-	0.375	0.075	0.312	1 Segment, Gold Plated Leads
KW 205S-DP	Decimal Point	5	10 ± 1.5	-	3.5 ± 1.6	0.047	-	0.375	0.075	0.312	1 Segment
KW 205S-DP-GPL-1	Decimal Point	5	10 ± 1.5	-	3.5 ± 1.6	0.047	-	0.375	0.075	0.312	1 Segment, Gold Plated Leads

Physical Dimensions



Display Pinout

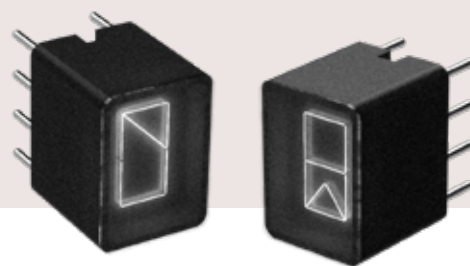


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-DP-TB	Decimal Point	4	10 ± 1.5	-	2.7 ± 1.4	0.047	-	0.375	0.075	0.312	1 Segment, Cannon Pins
KW 205S-DP-TB	Decimal Point	5	10 ± 1.5	-	3.2 ± 1.6	0.047	-	0.375	0.075	0.312	1 Segment, Cannon Pins

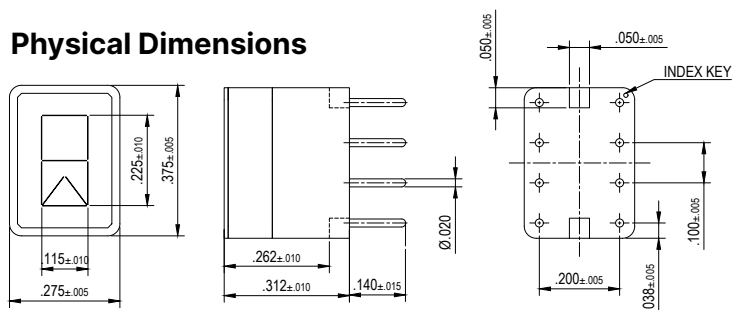
200 Series

Directional

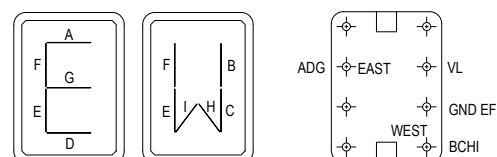
wamco



Physical Dimensions

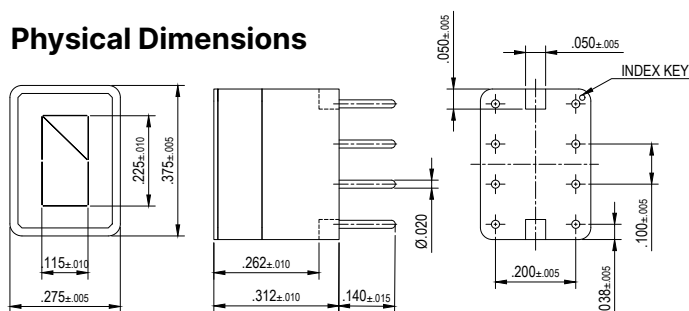


Display Pinout

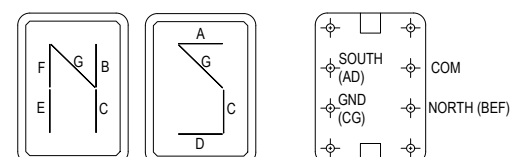


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-EW	East/West	4	14 ± 2	-	42 ± 10	0.225	0.115	0.375	0.275	0.312	9 Segment
KW 205S-EW	East/West	5	12 ± 2	-	51 ± 10	0.225	0.115	0.375	0.275	0.312	9 Segment

Physical Dimensions



Display Pinout

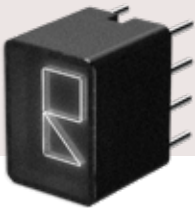


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-NS	North/South	4	14 ± 2	-	33 ± 7	0.225	0.115	0.375	0.275	0.312	7 Segment
KW 205S-NS	North/South	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment

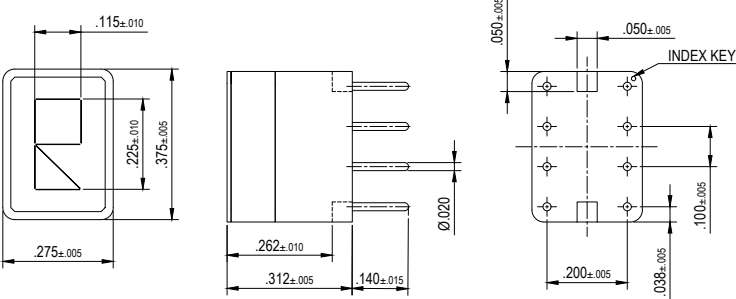
200 Series

Directional

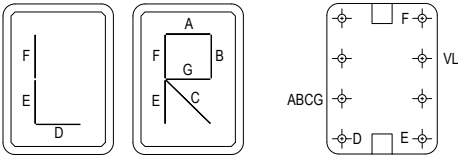
wamco



Physical Dimensions



Display Pinout

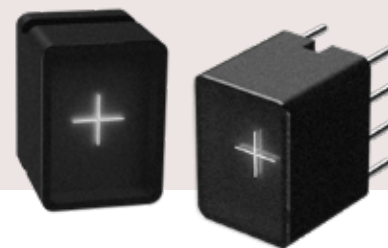


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-LR	Left/Right	4	14 ± 2	-	33 ± 7	0.225	0.115	0.375	0.275	0.312	7 Segment
KW 205S-LR	Left/Right	5	12 ± 2	-	40 ± 6	0.225	0.115	0.375	0.275	0.312	7 Segment

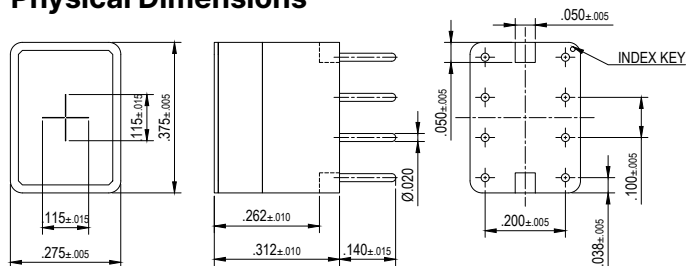
200 Series

Plus / Minus

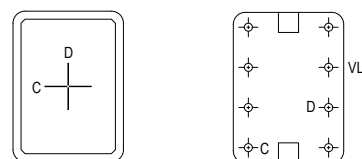
wamco



Physical Dimensions



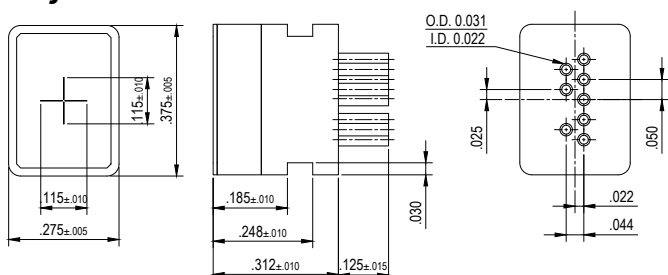
Display Pinout



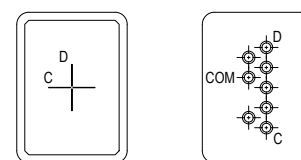
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-PM	Plus/Minus	4	14 ± 2	-	10 ± 3	0.115	0.115	0.375	0.275	0.312	2 Segment
KW 205S-PM	Plus/Minus	5	12 ± 2	-	11 ± 2.5	0.115	0.115	0.375	0.275	0.312	2 Segment
KW 205S-PM (GREEN)	Plus/Minus	5	12 ± 2	-	11 ± 2.5*	0.115	0.115	0.375	0.275	0.312	2 Segment, Green Glass
KW 205S-PM-A	Plus/Minus	5	12 ± 2	-	11 ± 2.5*	0.115	0.115	0.375	0.275	0.312	2 Segment, Amber Glass
KW 205S-PM-R	Plus/Minus	5	12 ± 2	-	11 ± 2.5*	0.115	0.115	0.375	0.275	0.312	2 Segment, Red Glass

*Millicandela rating for clear glass; colored glass yields lower brightness

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 205S-PM-TB	Plus/Minus	5	12 ± 2	-	11 ± 2.5	0.115	0.115	0.375	0.275	0.312	2 Segment, Cannon Pins

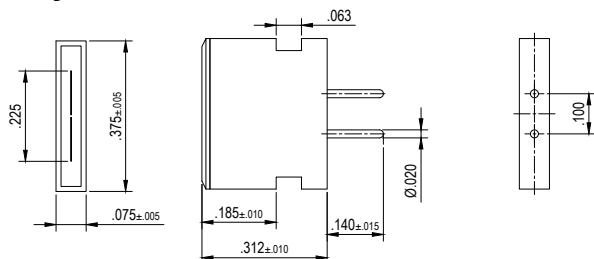
200 Series

Numeric 1

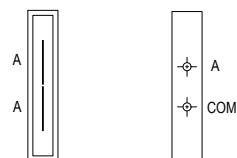
wamco



Physical Dimensions



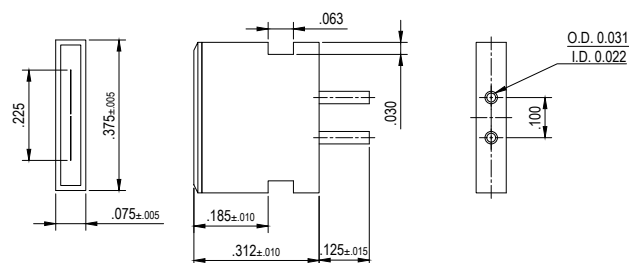
Display Pinout



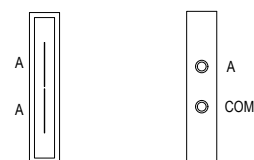
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-L1	Numeric 1	4	14 ± 2	-	10 ± 3	0.225	-	0.375	0.075	0.312	2 Segment
KW 205S-L1	Numeric 1	5	12 ± 2	-	11 ± 2.5	0.225	-	0.375	0.075	0.312	2 Segment
KW 205S-L1-FR	Numeric 1	5	12 ± 2	-	11 ± 2.5*	0.225	-	0.375	0.075	0.312	2 Segment, ALT Red Glass
KW 205S-L1-FR-X	Numeric 1	5	12 ± 2	-	11 ± 2.5*	0.225	-	0.375	0.075	0.312	2 Segment, ALT Red Glass, Aged
KW 205S-L1-R	Numeric 1	5	12 ± 2	-	11 ± 2.5*	0.225	-	0.375	0.075	0.312	2 Segment, Red Glass
KW 205S-L1-X	Numeric 1	5	12 ± 2	-	11 ± 2.5	0.225	-	0.375	0.075	0.312	2 Segment, Aged

*Millicandela rating for clear glass; colored glass yields lower brightness

Physical Dimensions



Display Pinout

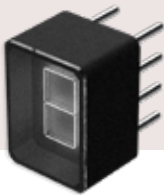


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 204S-L1-TB	Numeric 1	4	14 ± 2	-	10 ± 3	0.225	-	0.375	0.075	0.312	2 Segment, Cannon Pins
KW 205S-L1-TB	Numeric 1	5	12 ± 2	-	11 ± 2.5	0.225	-	0.375	0.075	0.312	2 Segment, Cannon Pins

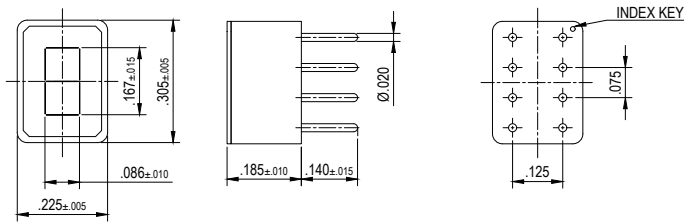
300 Series

Digit

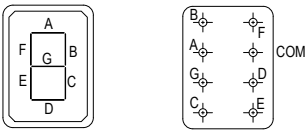
wamco



Physical Dimensions



Display Pinout

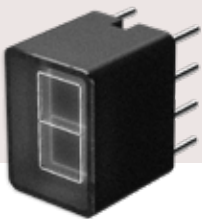


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 304S	Digit	4	12 ± 2	-	30 ± 6	0.167	0.086	0.305	0.225	0.185	7 Segment

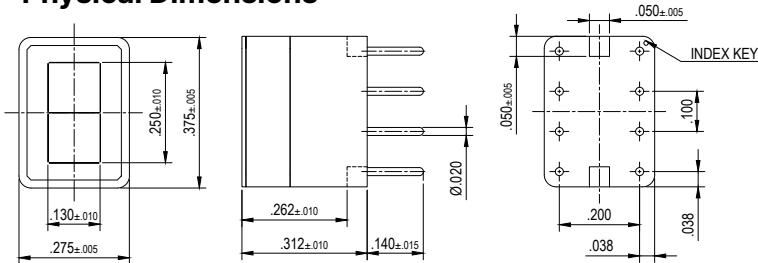
400 Series

Digit

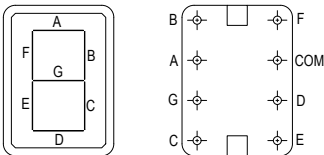
wamco



Physical Dimensions



Display Pinout

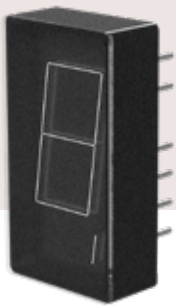


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 405S-10F	Digit	5	15 ± 2	-	36 ± 6	0.250	0.130	0.375	0.275	0.312	7 Segment
KW 405S-141	Digit	5	15 ± 2	-	47 ± 7	0.250	0.130	0.375	0.275	0.312	7 Segment, Index Mark, High Brightness

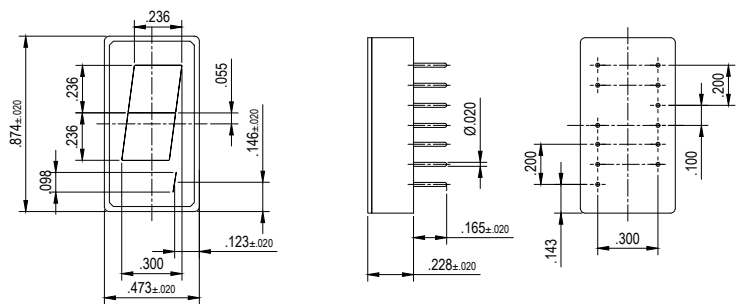
500 Series

Digit with Decimal Point

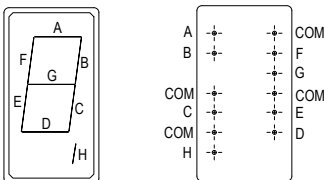
wamco



Physical Dimensions



Display Pinout



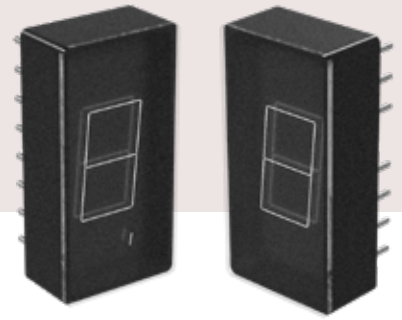
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 515	Digit with Decimal Point	5	17 ± 2	13 ± 2	60 ± 15*	0.472	0.236	0.886	0.473	0.227	7 Seg. with D.P.
KW 515-17	Digit with Decimal Point	5	17 ± 2	13 ± 2	60 ± 15*	0.472	0.236	0.886	0.473	0.227	7 Seg. with D.P., Aged

*Millicandela rating does not include decimal point or colon

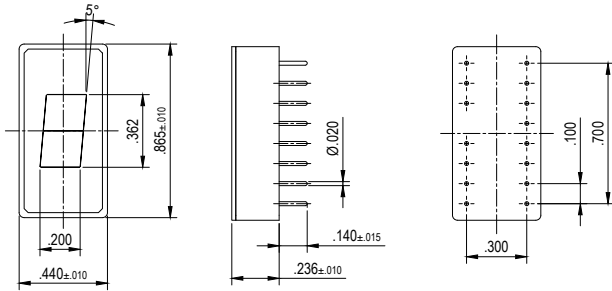
500F Series

Digit / Digit with Decimal Point

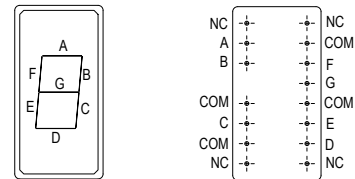
wamco



Physical Dimensions



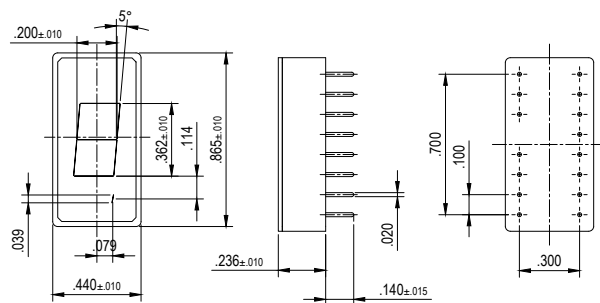
Display Pinout



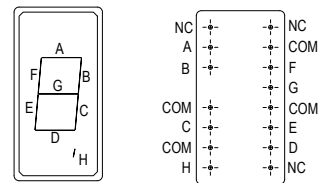
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 505F-8	Digit	5	8 ± 2	-	2.4 ± 0.5	0.362	0.200	0.865	0.440	0.236	7 Segment
KW 505F-15	Digit	5	15 ± 2	-	20 ± 5	0.362	0.200	0.865	0.440	0.236	7 Segment
KW 505F-17F*	Digit	5	12 ± 2	-	8.2 ± 0.7	0.362	0.300	0.865	0.440	0.236	7 Segment, Index Mark, Selected

*Dimensions differ from the above drawing, contact Wamco for detailed drawing

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 514F-15GY	Digit with Decimal Point	4	15 ± 2	13 ± 2	[20 ± 5]*†	0.362	0.200	0.865	0.440	0.236	7 Seg. with D.P., ALT Green Glass
KW 515F-4F-15	Digit with Decimal Point	5	15 ± 2	13 ± 2	15 ± 4*	0.362	0.200	0.865	0.440	0.236	7 Seg. with D.P., Selected
KW 515F-8	Digit with Decimal Point	5	8 ± 1.5	8 ± 1.5	2.4 ± 0.5*	0.362	0.200	0.865	0.440	0.236	7 Seg. with D.P.
KW 515F-15	Digit with Decimal Point	5	15 ± 2	13 ± 2	20 ± 5*	0.362	0.200	0.865	0.440	0.236	7 Seg. with D.P.

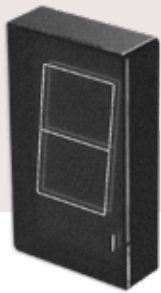
*Millicandela rating does not include decimal point or colon

†Millicandela rating for clear glass; colored glass yields lower brightness

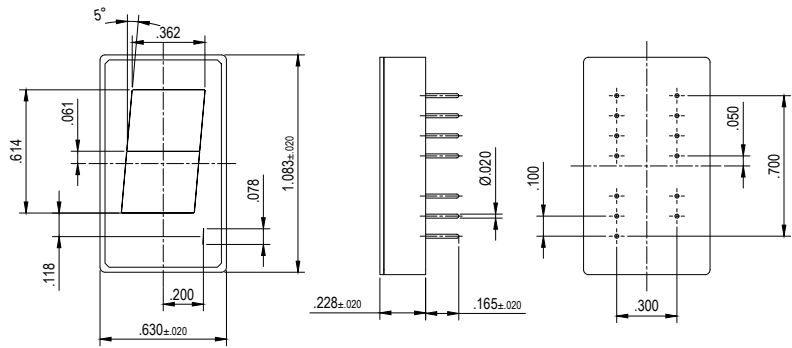
600 Series

Digit with Decimal Point

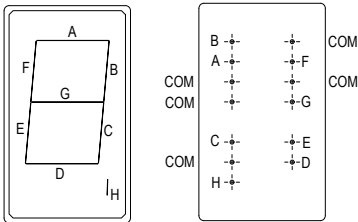
wamco



Physical Dimensions



Display Pinout



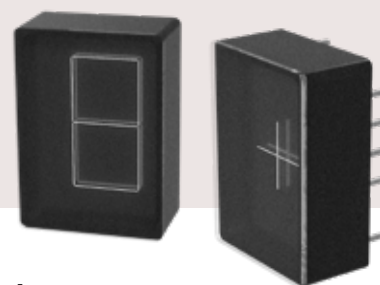
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 615-17	Digit with Decimal Point	5	17 ± 2	13 ± 2	70 ± 18*	0.614	0.362	1.083	0.630	0.228	7 Seg. with D.P.
KW 615-30	Digit with Decimal Point	5	30 ± 4	15 ± 3	82 ± 20*	0.614	0.362	1.083	0.630	0.228	7 Seg. with D.P.

*Millicandela rating does not include decimal point or colon

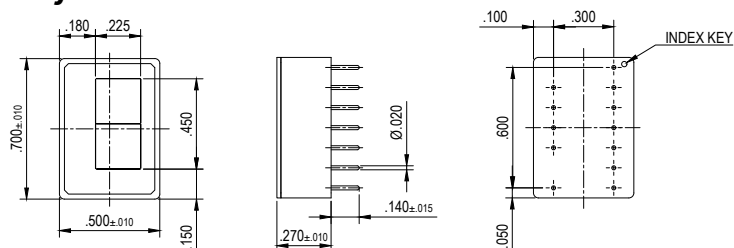
800 DIP Series

Dual In-Line Package

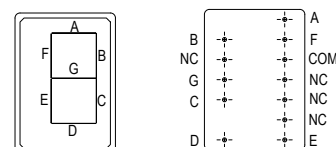
wamco



Physical Dimensions



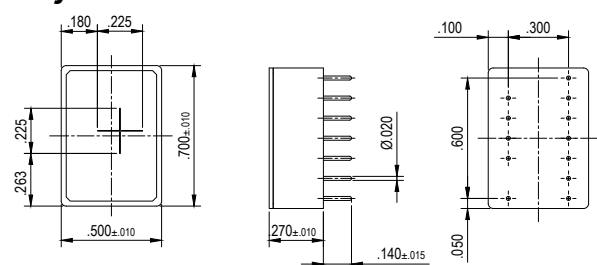
Display Pinout



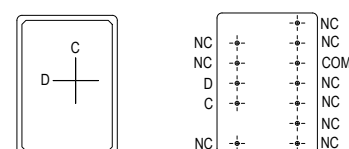
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 805-DIP	Digit	5	17 ± 2	-	55 ± 10	0.450	0.225	0.700	0.500	0.270	7 Segment
KW 815-DIP	Digit with Decimal Point	5	17 ± 2	13 ± 2	55 ± 10*	0.450	0.225	0.700	0.500	0.270	7 Seg. with D.P.

*Millicandela rating does not include decimal point or colon

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 805-DIP-PM	Plus/Minus	5	15 ± 3	-	15 ± 3	0.225	0.225	0.700	0.500	0.270	2 Segment

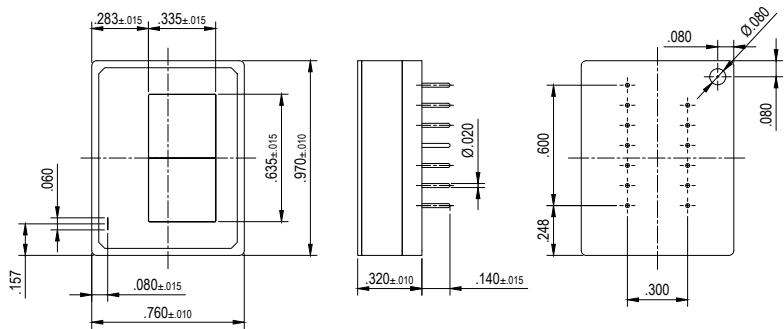
1000 DIP Series

Dual In-Line Package

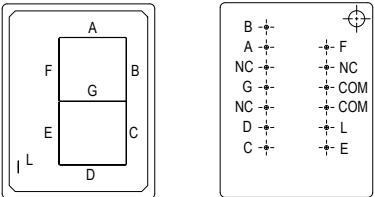
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KW 1005-DIP	Digit	5	17 ± 2	-	58 ± 12	0.635	0.335	0.970	0.760	0.320	7 Segment
KW 1015-DIP	Digit with Decimal Point	5	17 ± 2	13 ± 2*	58 ± 12	0.635	0.335	0.970	0.760	0.320	7 Seg. with D.P.

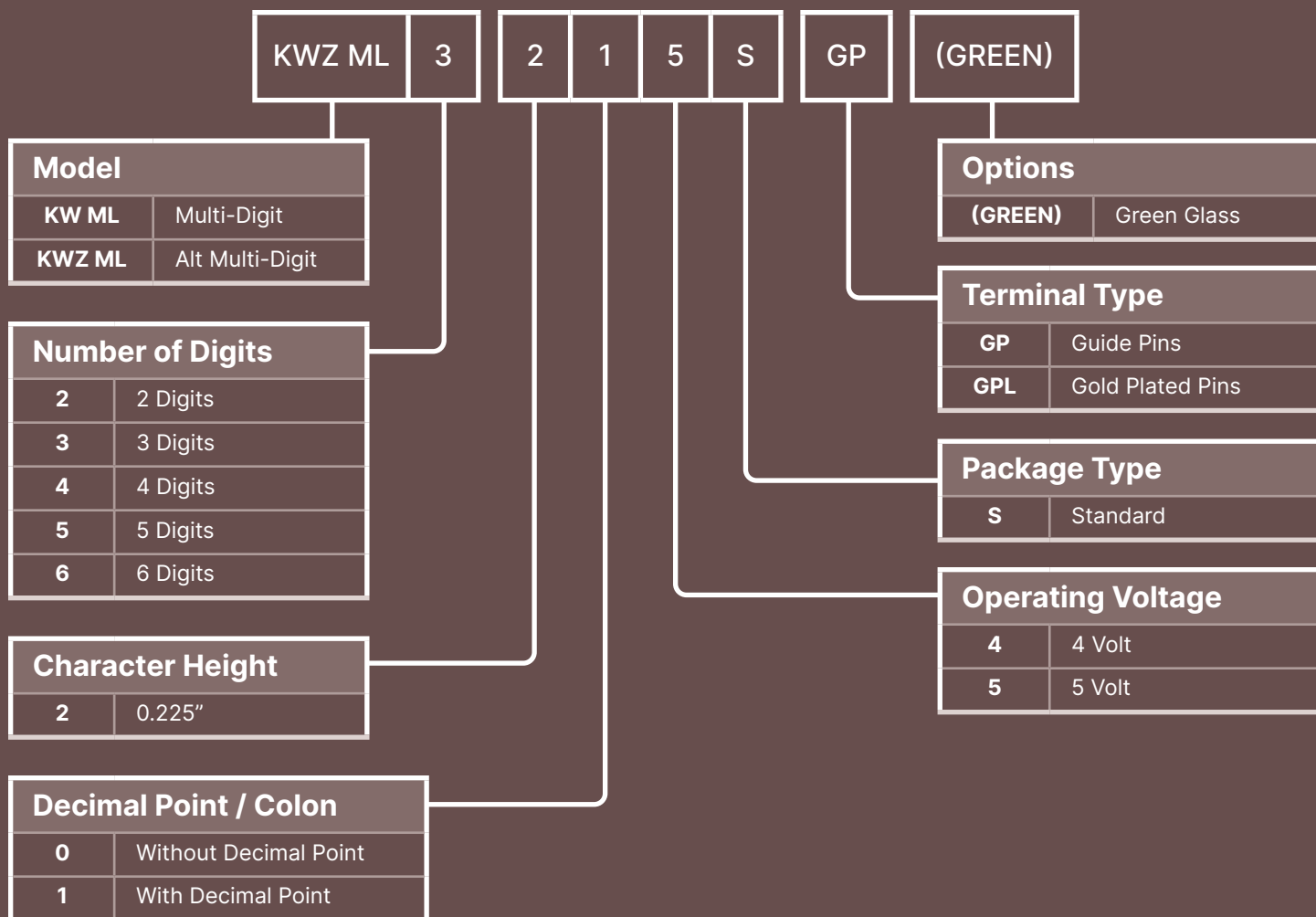
*Millicandela rating does not include decimal point or colon

ML Part Families

Multi-Digit Displays

Ordering Information

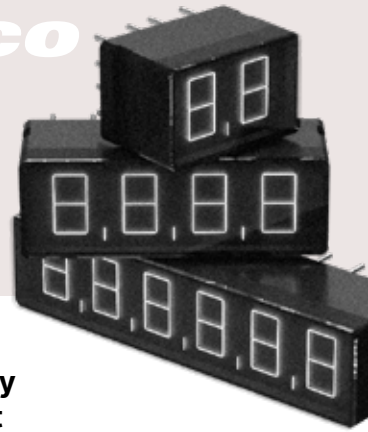
ML Part Families



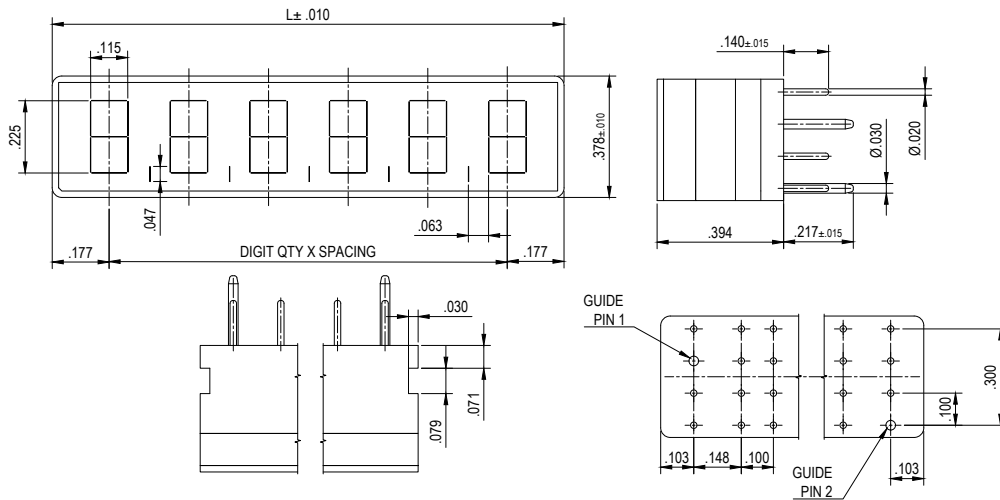
KW ML Series

Multi-Digit with Decimal Points/Guide Pins

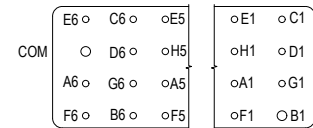
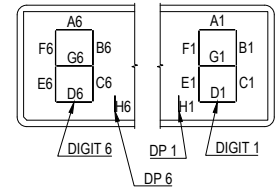
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KW ML2-215SGP	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	0.602	0.394	2 Digit with 1 D.P., with Guide Pins
KW ML3-215SGP	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	0.850	0.394	3 Digit with 2 D.P., with Guide Pins
KW ML4-215SGP	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	1.100	0.394	4 Digit with 3 D.P., with Guide Pins
KW ML6-215SGP	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	1.594	0.394	6 Digit with 5 D.P., with Guide Pins

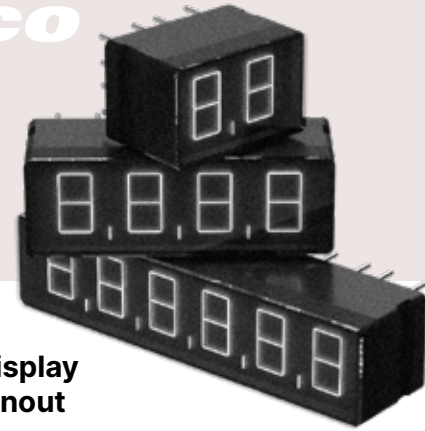
*Millicandela rating does not include decimal point or colon

†Millicandela rating for individual digit

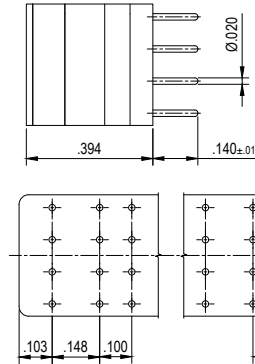
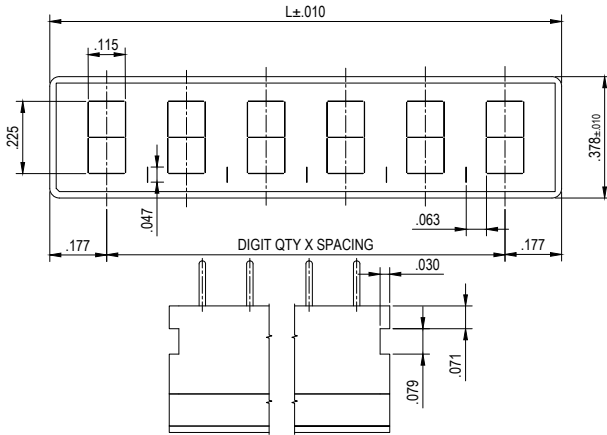
KW ML Series

Multi-Digit with Decimal Points

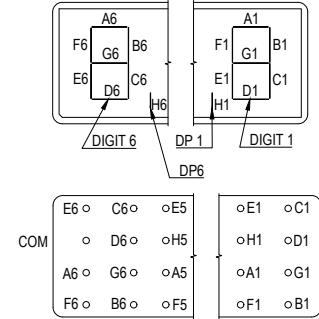
wamco



Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KW ML2-214S	Multi-Digit with Decimal Points	4	12 ± 2	[10]	33 ± 7*	0.225	0.115	0.248	0.378	0.602	0.394	2 Digit with 1 D.P.
KW ML2-215S	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6*	0.225	0.115	0.248	0.378	0.602	0.394	2 Digit with 1 D.P.
KW ML3-214S	Multi-Digit with Decimal Points	4	12 ± 2	[10]	33 ± 7*	0.225	0.115	0.248	0.378	0.850	0.394	3 Digit with 2 D.P.
KW ML3-215S	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6*	0.225	0.115	0.248	0.378	0.850	0.394	3 Digit with 2 D.P.
KW ML3-215S (GREEN)	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	0.850	0.394	3 Digit with 2 D.P., Green Glass
KW ML4-214S	Multi-Digit with Decimal Points	4	12 ± 2	[10]	33 ± 7*	0.225	0.115	0.248	0.378	1.100	0.394	4 Digit with 3 D.P.
KW ML4-215S	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6*	0.225	0.115	0.248	0.378	1.100	0.394	4 Digit with 3 D.P.
KW ML4-215S (GREEN)	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	1.100	0.394	4 Digit with 3 D.P., Green Glass
KW ML5-214S	Multi-Digit with Decimal Points	4	12 ± 2	[10]	33 ± 7*	0.225	0.115	0.248	0.378	1.346	0.394	5 Digit with 4 D.P.
KW ML5-215S	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6*	0.225	0.115	0.248	0.378	1.346	0.394	5 Digit with 4 D.P.
KW ML5-215S (GREEN)	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6**	0.225	0.115	0.248	0.378	1.346	0.394	5 Digit with 4 D.P., Green Glass
KW ML6-214S	Multi-Digit with Decimal Points	4	12 ± 2	[10]	33 ± 7*	0.225	0.115	0.248	0.378	1.594	0.394	6 Digit with 5 D.P.
KW ML6-215S	Multi-Digit with Decimal Points	5	12 ± 2	[10]	40 ± 6*	0.225	0.115	0.248	0.378	1.594	0.394	6 Digit with 5 D.P.

*Millicandela rating does not include decimal point or colon

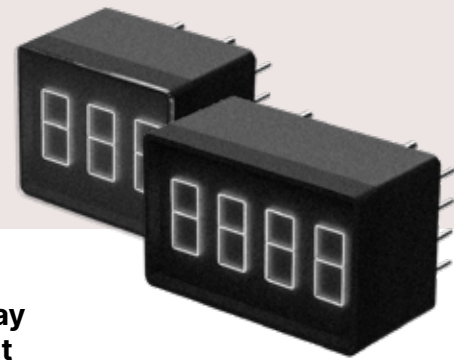
†Millicandela rating for clear glass; colored glass yields lower brightness

‡Millicandela rating for individual digit

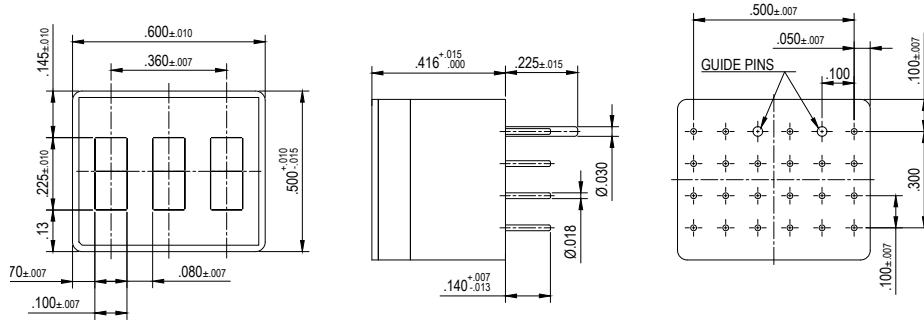
KWZ ML Series

Multi-Digit

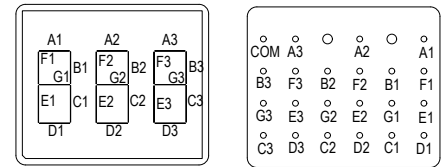
wamco



Physical Dimensions



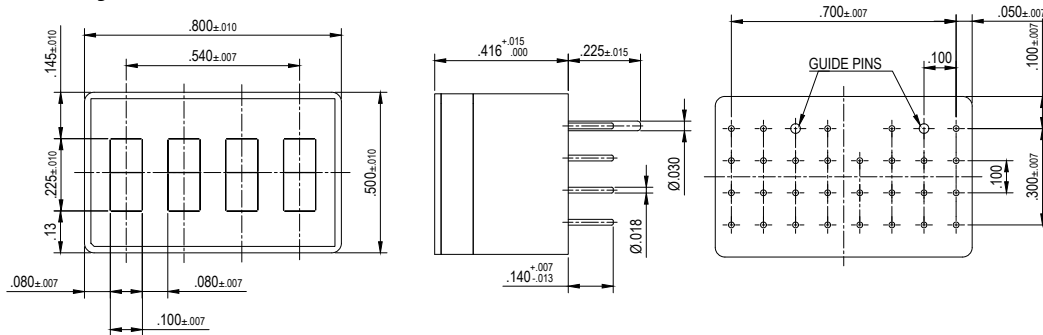
Display Pinout



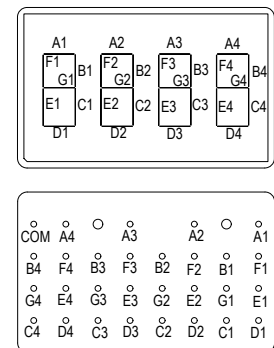
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KWZ ML3-205S	Multi-Digit	5	11.5 ± 1.5	-	112.5 ± 15*	0.225	0.100	0.180	0.500	0.600	0.416	3 Digit, with Guide Pins

*Millicandela rating for individual digit

Physical Dimensions



Display Pinout



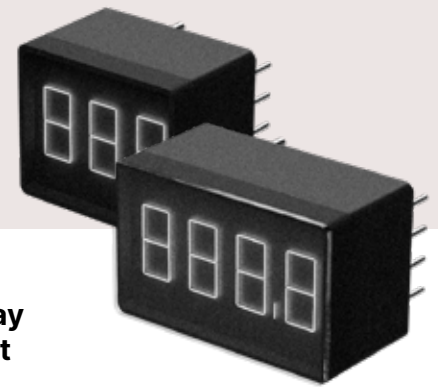
Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KWZ ML4-205S	Multi-Digit	5	11.5 ± 1.5	-	150 ± 20*	0.225	0.100	0.180	0.500	0.800	0.416	4 Digit, with Guide Pins

*Millicandela rating for individual digit

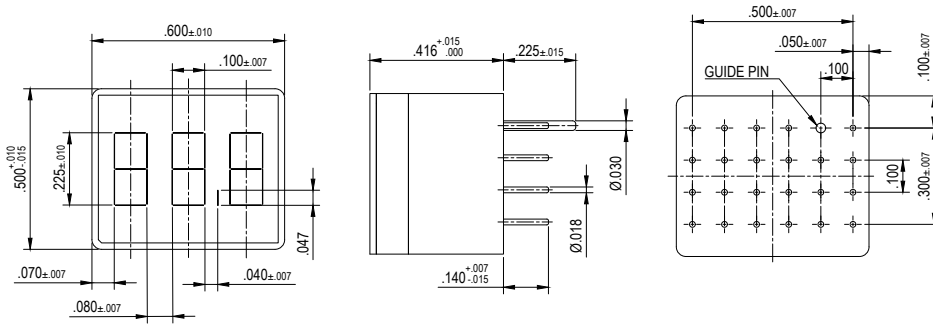
KWZ ML Series

Multi-Digit with Decimal Point

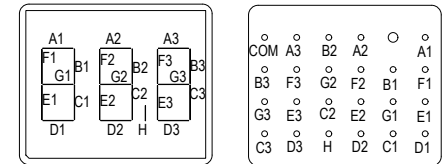
wamco



Physical Dimensions



Display Pinout

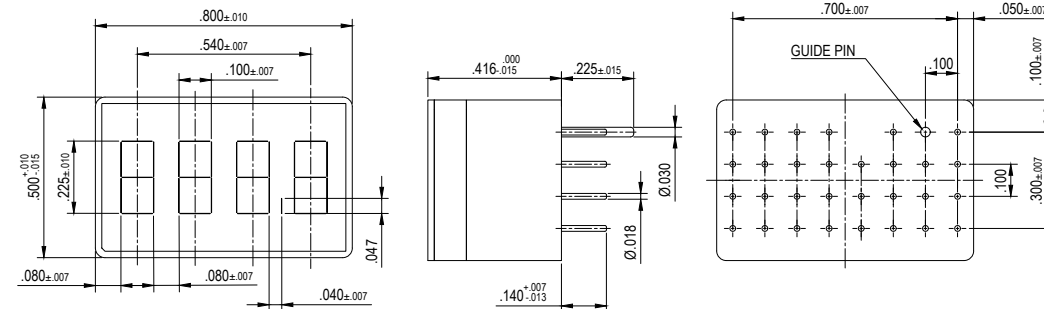


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KWZ ML3-215S	Multi-Digit with Decimal Point	5	11.5 ± 1.5	[10]	116 ± 17**	0.225	0.100	0.180	0.500	0.600	0.416	3 Digit with 1 D.P., with Guide Pins

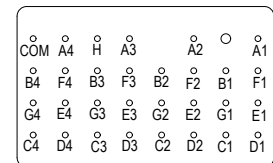
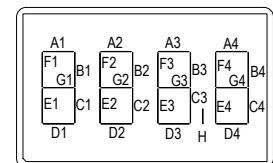
*Millicandela rating does not include decimal point or colon

†Millicandela rating for individual digit

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	Spacing	H	W	D	
KWZ ML4-215S	Multi-Digit with Decimal Point	5	11.5 ± 1.5	[10]	153 ± 22**	0.225	0.100	0.180	0.500	0.800	0.416	4 Digit with 1 D.P., with Guide Pins

*Millicandela rating does not include decimal point or colon

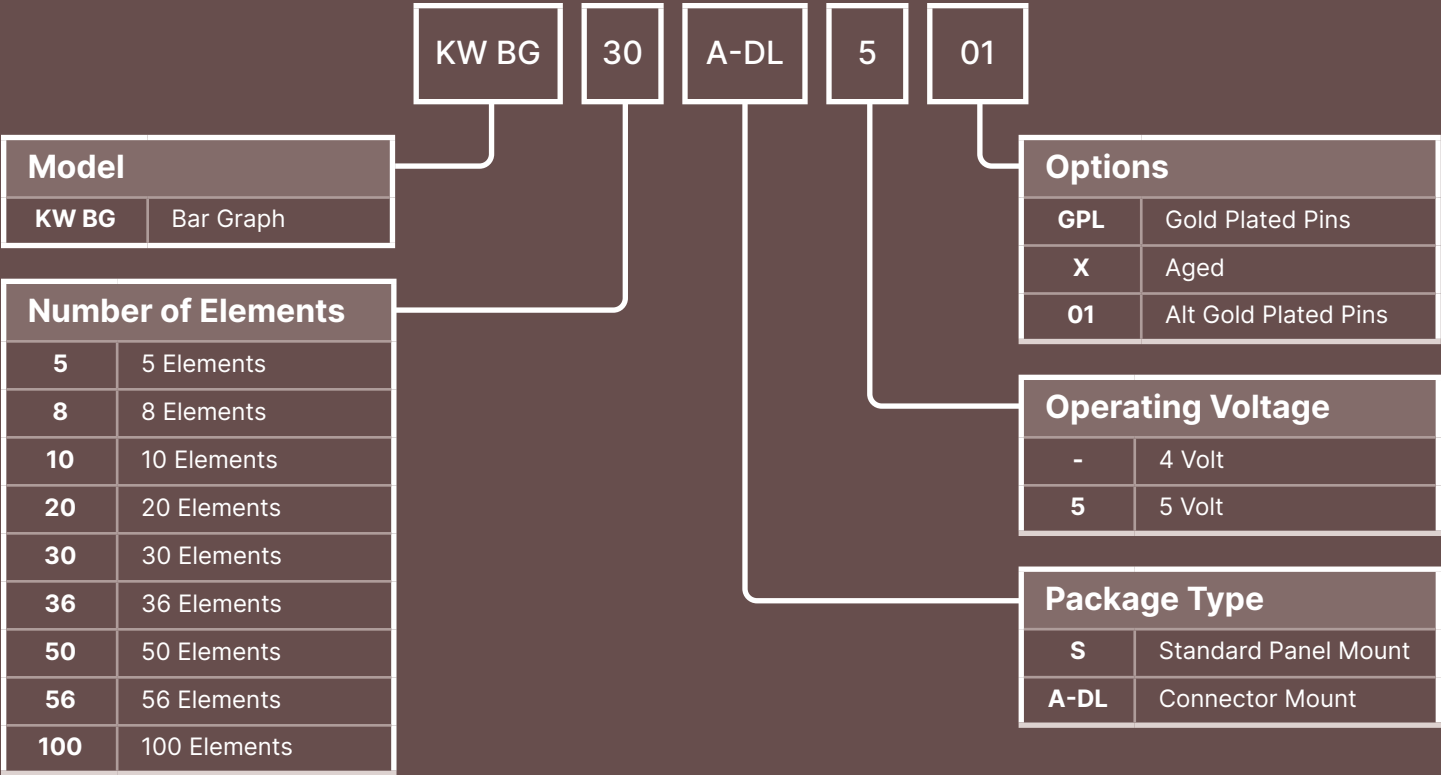
†Millicandela rating for individual digit

KW BG Part Family

Bar Graph Displays

Ordering Information

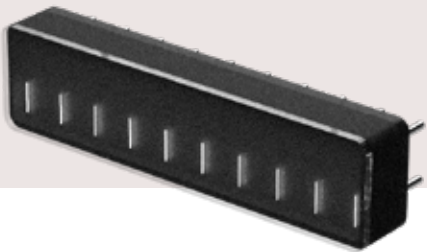
KW BG Part Family



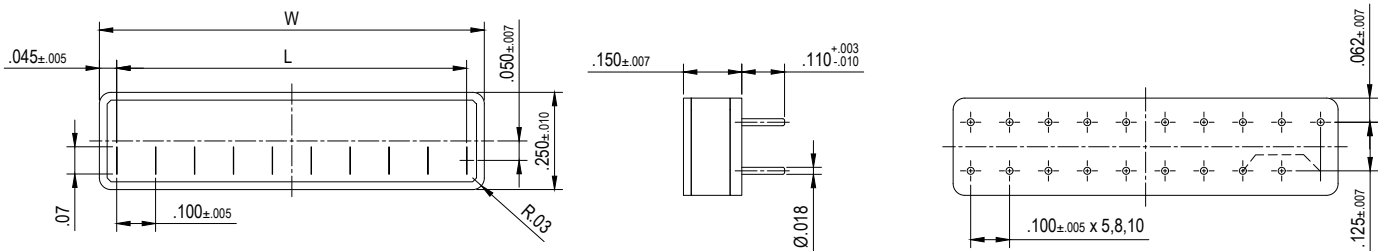
KW BG Series

Bar Graph

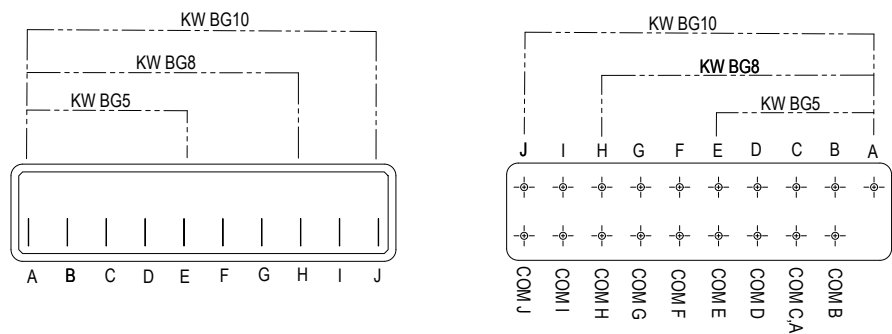
wamco



Physical Dimensions



Display Pinout

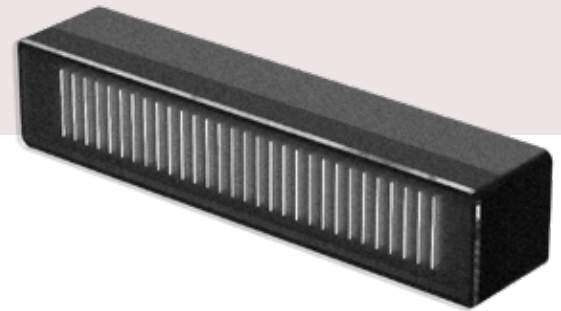


Part Number	Description	Voltage (V)	Current Per Segment (mA)	Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment		H	W	Spacing	H	W	D	
KW BG-5	Bar Graph	5	17.5 ± 1.5	30 ± 5	0.070	0.400	0.100	0.250	0.490	0.150	5 Elements
KW BG-8	Bar Graph	5	17.5 ± 1.5	30 ± 5	0.070	0.700	0.100	0.250	0.790	0.150	8 Elements
KW BG-10	Bar Graph	5	17.5 ± 1.5	30 ± 5	0.070	0.900	0.100	0.250	0.990	0.150	10 Elements

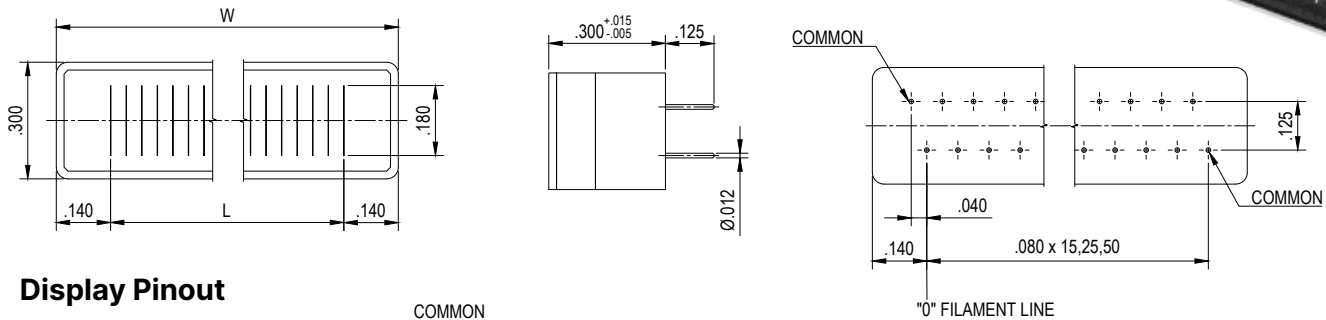
KW BG A-DL Series

Bar Graph Connector Mount

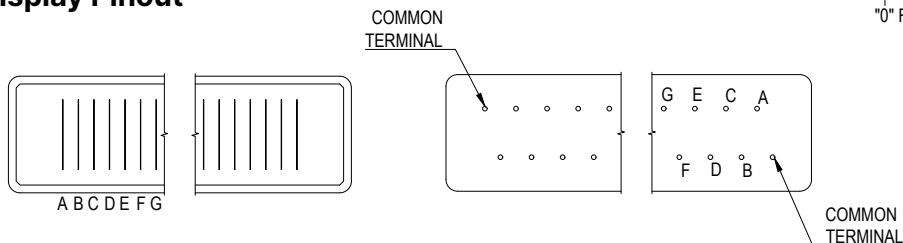
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Physical Dimensions



Display Pinout

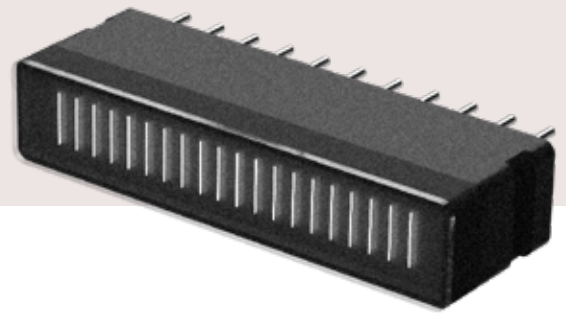


Part Number	Description	Voltage (V)	Current Per Segment (mA)	Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment		H	W	Spacing	H	W	D	
KW BG-30S	Bar Graph	4	10 MAX.	[Not Rated]	0.180	1.160	0.040	0.300	1.440	0.300	30 Elements
KW BG-30S-X	Bar Graph	4	10 MAX.	[Not Rated]	0.180	1.160	0.040	0.300	1.440	0.300	30 Elements, Aged
KW BG-30-A-DL	Bar Graph	4	10 MAX.	[Not Rated]	0.180	1.160	0.040	0.300	1.440	0.300	30 Elements
KW BG-30-A-DL-5	Bar Graph	5	10 MAX.	[Not Rated]	0.180	1.160	0.040	0.300	1.440	0.300	30 Elements
KW BG-30-A-DL-5-01	Bar Graph	5	10 MAX.	[Not Rated]	0.180	1.160	0.040	0.300	1.440	0.300	30 Elements, Gold Plated Leads
KW BG-50-A-DL	Bar Graph	4	10 MAX.	[Not Rated]	0.180	1.960	0.040	0.300	2.240	0.300	50 Elements
KW BG-50-A-DL-5	Bar Graph	5	10 MAX.	[Not Rated]	0.180	1.960	0.040	0.300	2.240	0.300	50 Elements
KW BG-100-A-DL-5	Bar Graph	5	10 MAX.	[Not Rated]	0.180	3.960	0.040	0.300	4.240	0.300	100 Elements
KW BG-100A-DL-GPL5	Bar Graph	5	10 MAX.	[Not Rated]	0.180	3.960	0.040	0.300	4.240	0.300	100 Elements, Gold Plated Leads

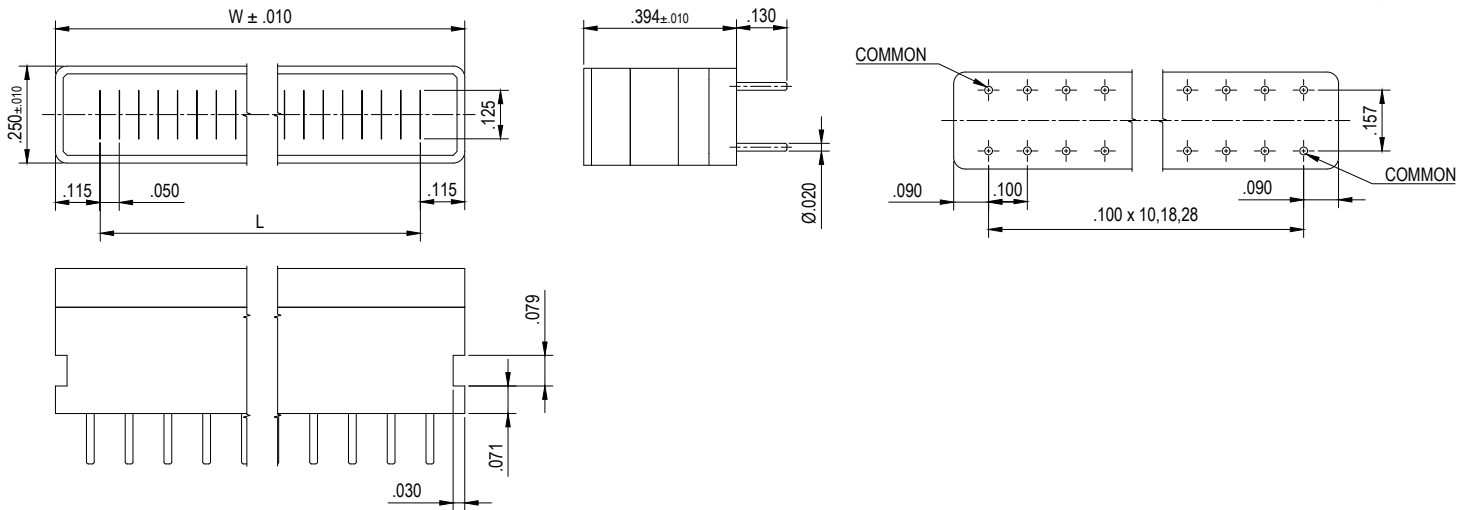
KW BG S Series

Bar Graph Standard Panel Mount

wamco



Physical Dimensions



Display Pinout



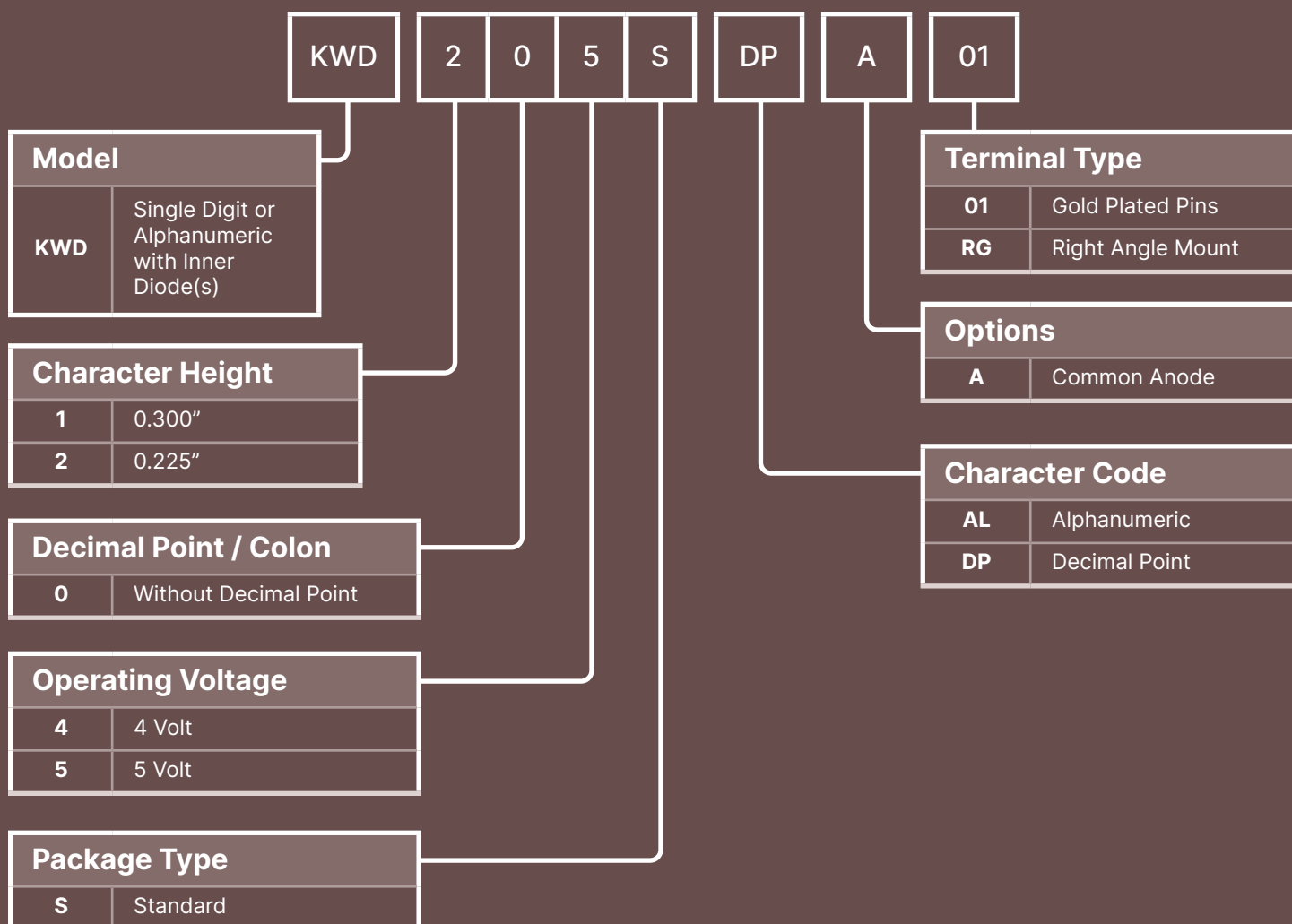
Part Number	Description	Voltage (V)	Current Per Segment (mA)	Luminous Intensity (mcd)	Character (In)			Package Dims (In)			Remarks
			Segment		H	W	Spacing	H	W	D	
KW BG-20S	Bar Graph	4	10 MAX.	[Not Rated]	0.125	0.950	0.050	0.250	1.180	0.394	20 Elements
KW BG-20S-5	Bar Graph	5	10 MAX.	[Not Rated]	0.125	0.950	0.050	0.250	1.180	0.394	20 Elements
KW BG-36S	Bar Graph	4	10 MAX.	[Not Rated]	0.125	1.750	0.050	0.250	1.980	0.394	36 Elements
KW BG-36S-5	Bar Graph	5	10 MAX.	[Not Rated]	0.125	1.750	0.050	0.250	1.980	0.394	36 Elements
KW BG-56S	Bar Graph	4	10 MAX.	[Not Rated]	0.125	2.750	0.050	0.250	2.980	0.394	56 Elements
KW BG-56S-5	Bar Graph	5	10 MAX.	[Not Rated]	0.125	2.750	0.050	0.250	2.980	0.394	56 Elements

KWD Part Family

Displays with Inner Diodes

Ordering Information

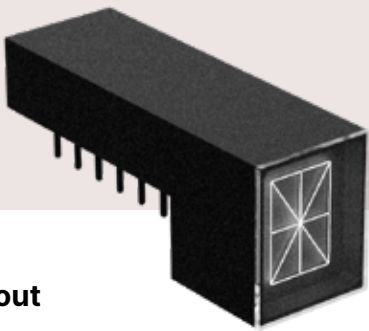
KWD Part Family



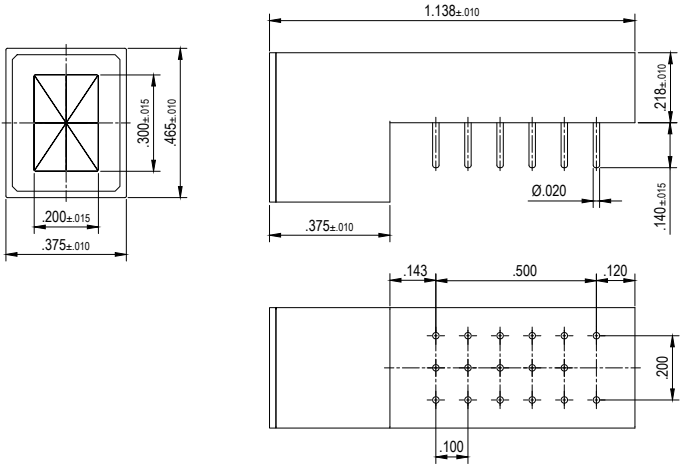
100 / 200 Series

Alphanumeric with Inner Diode(s)

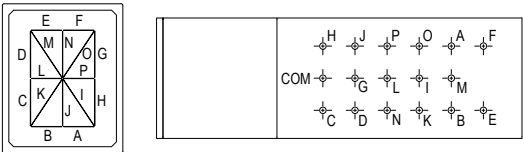
wamco



Physical Dimensions



Display Pinout

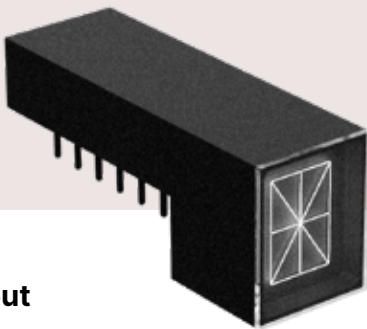


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KWD 104AL-RG	Alphanumeric	4	15 ± 2	-	90 ± 20	0.300	0.200	0.468	0.375	1.138	16 Seg. with Diode, Right Angle Mount
KWD 105AL-RG	Alphanumeric	5	15 ± 2	-	109 ± 23	0.300	0.200	0.468	0.375	1.138	16 Seg. with Diode, Right Angle Mount

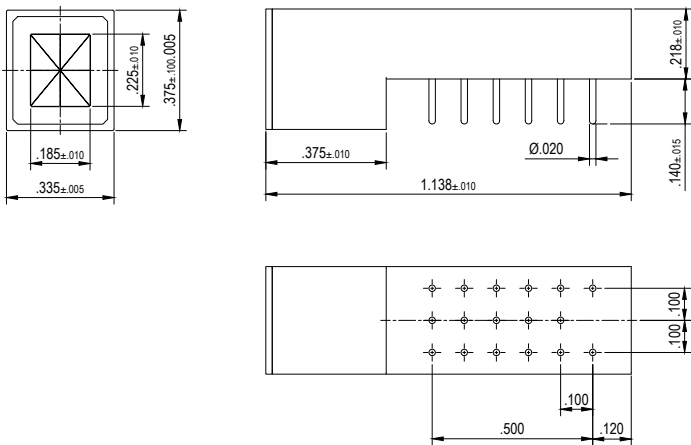
100 / 200 Series

Alphanumeric with Inner Diode(s)

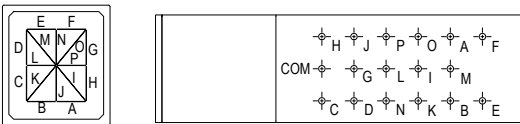
wamco



Physical Dimensions



Display Pinout

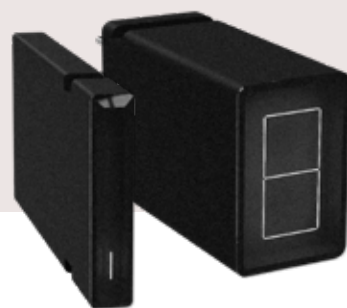


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KWD 204AL-RG	Alphanumeric	4	14 ± 2	-	75 ± 15	0.225	0.187	0.375	0.335	1.138	16 Seg. with Diode, Right Angle Mount
KWD 205AL-RG	Alphanumeric	5	12 ± 2	-	89 ± 16	0.225	0.187	0.375	0.335	1.138	16 Seg. with Diode, Right Angle Mount

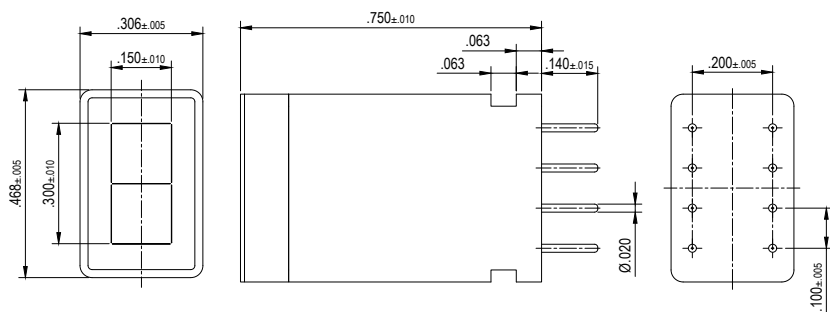
100 / 200 Series

Digit / Decimal Point with Inner Diode(s)

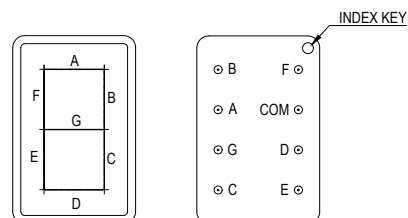
wamco



Physical Dimensions

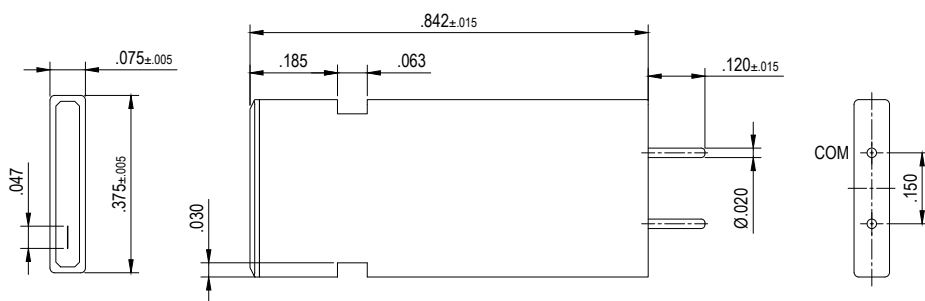


Display Pinout

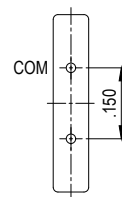


Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KWD 105S-A	Digit	5	15 ± 2	-	52.5 ± 9.5	0.300	0.150	0.468	0.306	0.750	7 Seg. with Diode, Common Anode

Physical Dimensions



Display Pinout



Part Number	Description	Voltage (V)	Current Per Segment (mA)		Luminous Intensity (mcd)	Character (In)		Package Dims (In)			Remarks
			Segment	D.P. / Colon		H	W	H	W	D	
KWD 205S-DP-A-01	Decimal Point	5	10 ± 1.5	-	3.2 ± 1.6	0.047	-	0.375	0.075	0.842	1 Seg. with Diode, Common Anode, Gold Plated Leads

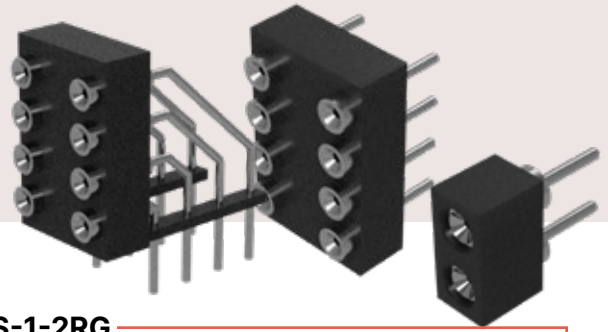
KWS Part Family

Sockets for KW 100S / 200S Series Displays

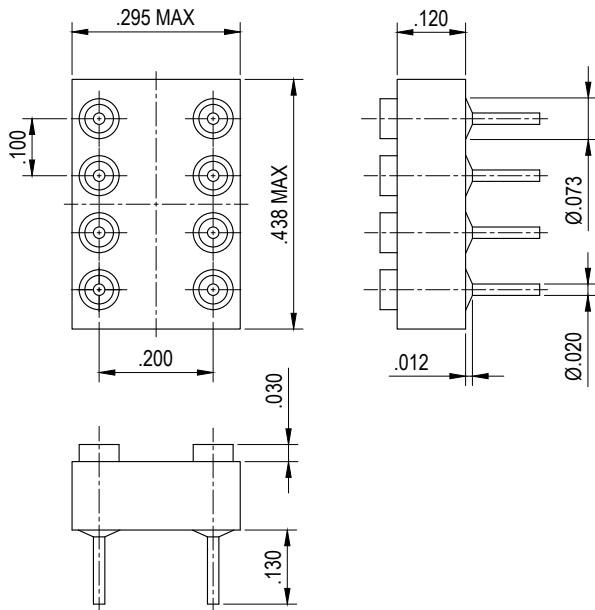
KWS Series

Sockets for KW 100S / 200S

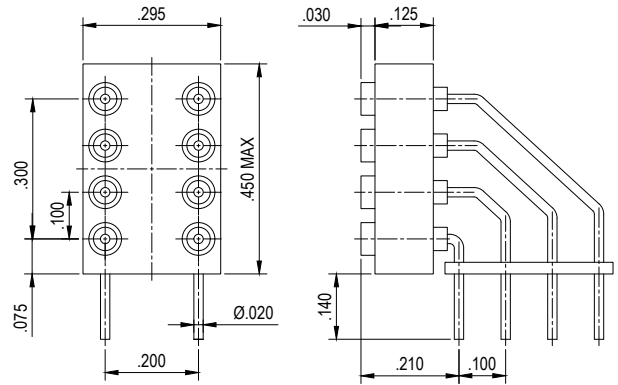
wamco



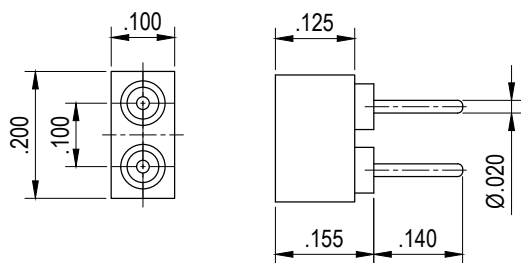
KWS 8



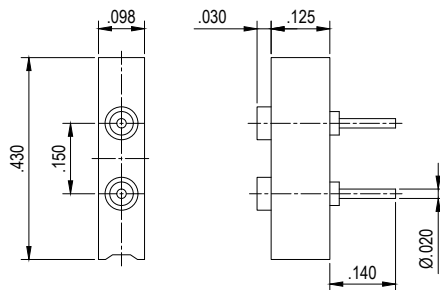
KWS-1-2RG



KWS DP-1



KWS DP-2



Part Number	Description	Type	Number of Pins	Pin Spacing (In)	Package Dims (In)			Remarks
					H	W	D	
KWS 8	Socket	DIP	8	.100	0.438	0.295	0.120	use with 7-Segment, PM, XY, LR, EW, & NS Displays
KWS-1-2RG	Socket	DIP	8	.100	0.450	0.295	0.125	use with 7-Segment, PM, XY, LR, EW, & NS Displays, Right Angle Mount
KWS DP-1	Socket	DIP	2	.100	0.200	0.100	0.125	use with 200S Series DP, & L1 Displays
KWS DP-2	Socket	DIP	2	.150	0.430	0.098	0.125	use with 100S Series DP & L1 Displays

Display Patterns

Digit, Alphanumeric, and Symbol Patterns

Display Pattern

7-Segment Digits

Active Segment(s) Truth Table							
	A	B	C	D	E	F	G
0	•	•	•	•	•	•	
1		•	•				
2	•	•		•	•		•
3	•	•	•	•			•
4		•	•			•	•
5	•		•	•		•	•

Active Segment(s) Truth Table							
	A	B	C	D	E	F	G
6	•		•	•	•	•	•
7	•	•	•				
8	•	•	•	•	•	•	•
9	•	•	•	•		•	•

Display Pattern

16-Segment Alphabetic

Active Segment(s) Truth Table																
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
			●	●	●	●	●	●				●				●
	●	●			●	●	●	●		●				●		●
	●	●	●	●	●	●										
	●	●			●	●	●	●		●				●		
	●	●	●	●	●	●						●				●
			●	●	●	●						●				●
	●	●	●	●	●	●		●								●
			●	●			●	●				●				●
	●	●			●	●				●				●		
		●	●		●	●				●				●		
			●	●					●			●			●	
	●	●	●	●												
			●	●			●	●					●		●	
									●							
	●	●	●	●												
			●	●			●	●					●		●	

Display Pattern

16-Segment Alphanumeric

Active Segment(s) Truth Table																
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
			•	•			•	•	•				•			
	•	•	•	•	•	•	•	•								
			•	•	•	•	•					•				•
	•	•	•	•	•	•	•	•	•							
			•	•	•	•	•		•			•				•
	•	•		•	•	•		•				•				•
					•	•				•				•		
	•	•	•	•			•	•								
			•	•							•				•	
	•	•	•	•			•	•								
			•	•							•				•	
			•	•			•	•	•		•					
									•		•		•		•	
	•	•		•			•	•				•				•
	•	•			•	•					•				•	

Display Pattern

16-Segment Alphabetic

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Active Segment(s) Truth Table																
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
		•	•	•	•					•				•		
										•				•		
		•	•		•							•		•		
		•			•					•		•		•		
				•						•		•		•		
		•		•	•					•		•				
		•	•	•	•					•		•				
					•					•				•		
		•	•	•	•					•		•		•		
		•		•	•					•		•		•		
										•		•		•		•
												•				•
									•	•	•	•	•	•	•	•

Display Pattern

Symbols

North/South

Active Segment(s) Truth Table			
	COM	N	S

East/West

Active Segment(s) Truth Table			
	COM	E	W

Left/Right

Active Segment(s) Truth Table				
	ABCG	D	E	F

X/Y

Active Segment(s) Truth Table				
	A	B	C	D

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In Alphabetical Order

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