



Capacitive Touch Switch

General Description

The ARL Series capacitive touch switches provide an embedded capacitive-touch slider functionality with multiple options and appearances. An additional pushbutton switch allows additional functionality.

The vibration motor option can be used to provide vibration feedback to the user when the pushbutton switch is activated.

The optional time can be used for time-demand programs.

Applications include audio/video equipment, automotive, lighting, instrumentation and appliances.

Absolute Maximum Ratings

Absolute maximum ratings are those values which damage to the device may occur

Parameter	Symbol	Value	Unit
Input Voltage	V_{CC}	0 ~ 28	VDC
Operating Temperature	T_{OP}	-20 ~ +75	°C
Storage Temperature	T_{STG}	-55 ~ +125	°C
Motor Operating Voltage	$V_{MOTOR(MAX)}$	4	V

Note: GND is system ground

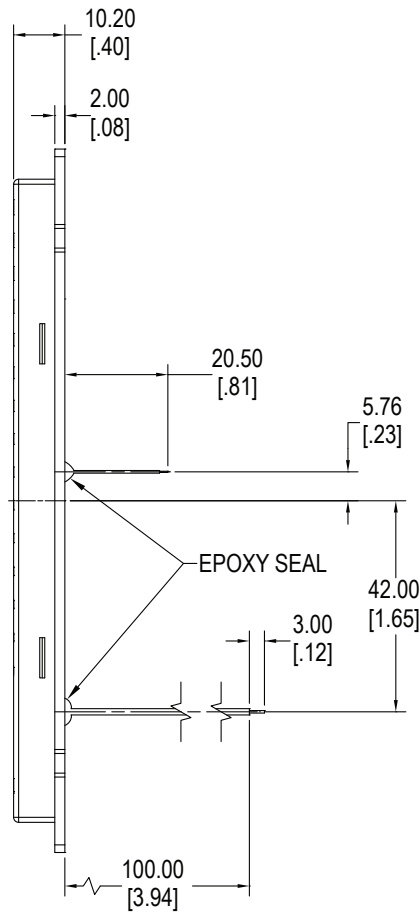
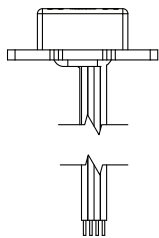
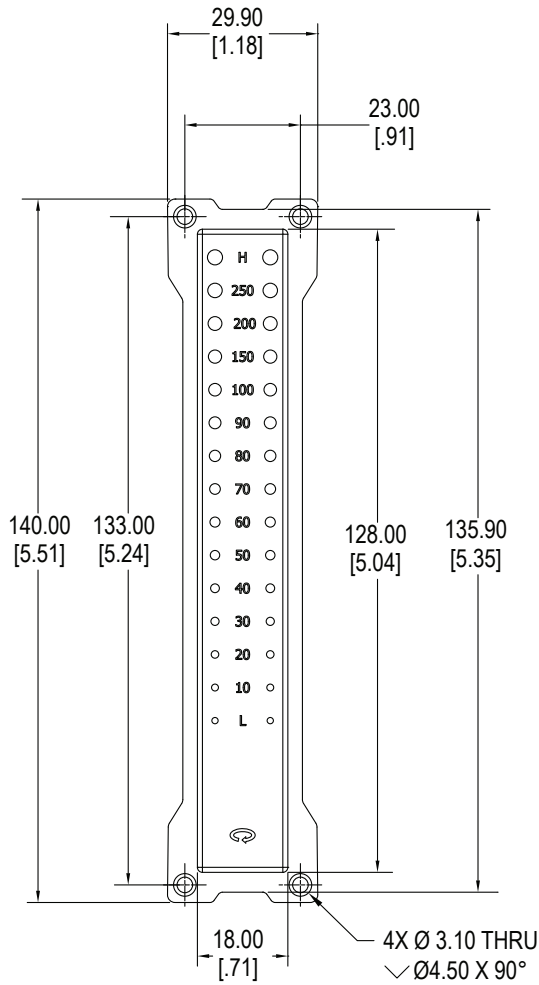
DC Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating Voltage	V_{DD}	$V_{CC} = 5.0V$	2.8	-	5.5	V
Operating Current	I_{CC}	$V_{CC} = 5.0V$	2	-	20	mA
Standby Current	I_{STB}	$V_{CC} = 5.0V$	-	7	-	mA
Output High Voltage	V_{OH}	$V_{CC} = 5.0V$	-	3.4	-	V
Output Low Voltage	V_{OL}	$V_{CC} = 5.0V$	0	0.4	0	V
Motor Terminal Resistance	R_M	$T_{OP} = 25^{\circ}C$	25	31	35	Ω
Motor Operating Voltage	V_{MOTOR}	$T_{OP} = 25^{\circ}C$	2.5	3	4.0	V
Motor Starting Voltage	$V_{MOTOR-START}$	$T_{OP} = 25^{\circ}C$	2.3	-	-	V
Motor Starting Current	$I_{MOTOR-START}$	$T_{OP} = 25^{\circ}C, V_{MOTOR} = 3.0V$	-	120	-	mA
Motor Speed	r/min	$V_{MOTOR} = 3.0V$	-	9000	-	r/min
Motor Steady State Current	I_{MOTOR}	$V_{MOTOR} = 0.8V \sim 3.0V$	20	-	90	mA

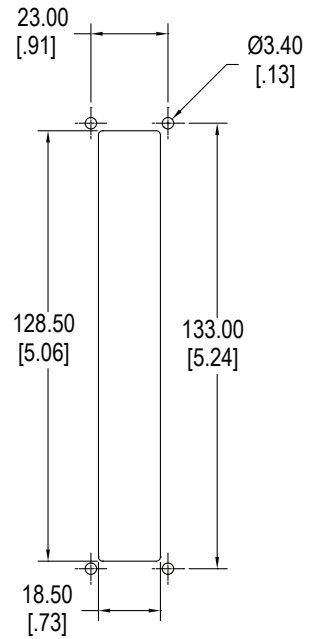
AC Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output PWM Frequency	f_{PWM}	$V_{CC} = 5.0V, T_{OP} = 25^{\circ}C$	199	200	201	Hz
Output PWM Duty Cycle	T%	$V_{CC} = 5.0V$	3	-	57	%
Output Rise Time	t_R	$V_{CC} = 5.0V, I_{CC} = 7mA$	-	10	20	μS
Output Fall Time	t_F	$V_{CC} = 5.0V, I_{CC} = 7mA$	-	10	20	μS

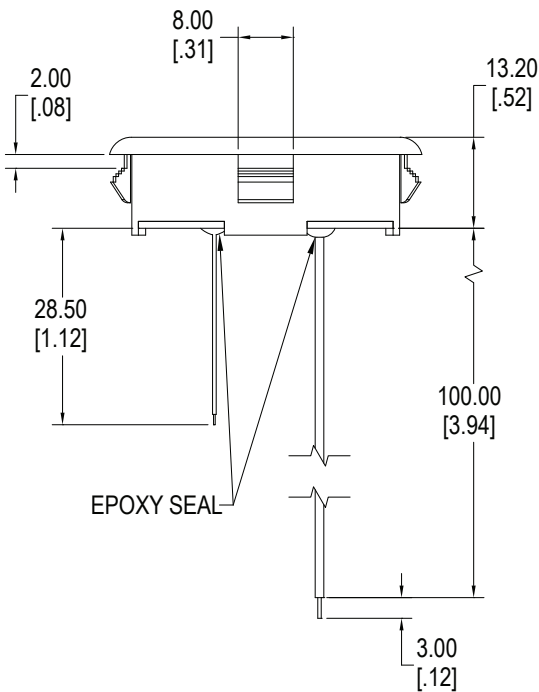
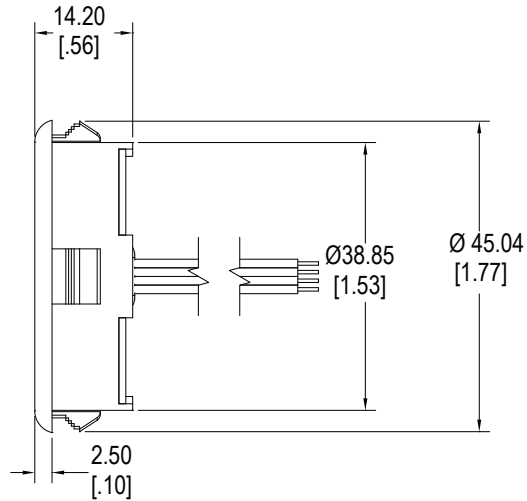
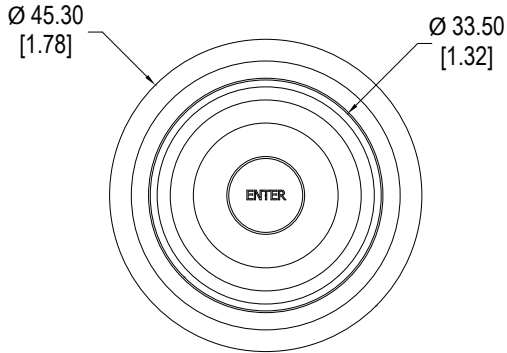
Dimensions - Rectangle



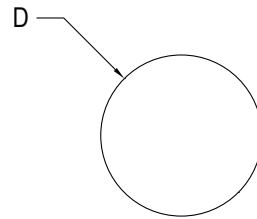
Panel Cutout



Dimensions - Rotary

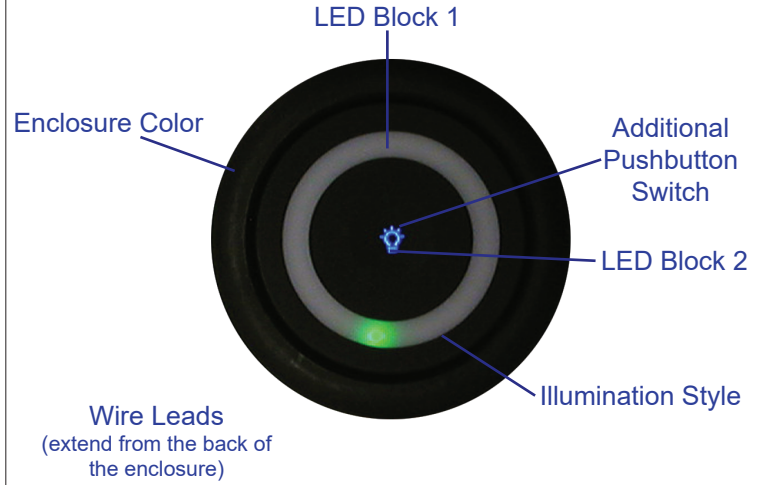


Panel Cutout

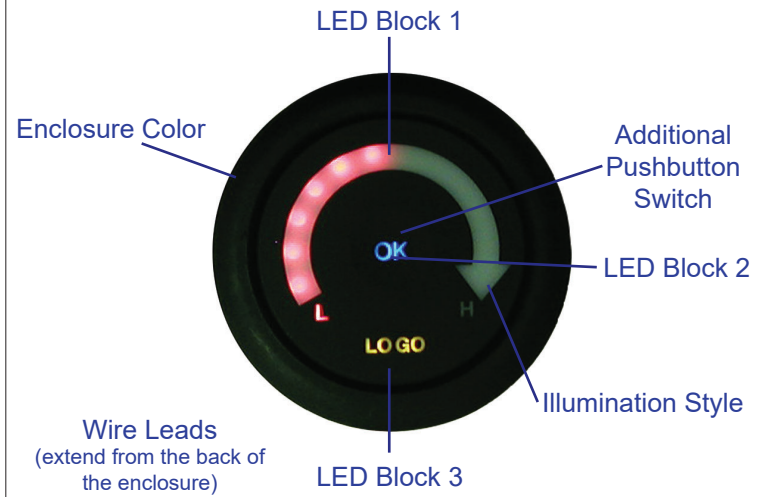


Panel Thickness	Cutout Diameter
1.0-2.0 (.04-.08)	43.5-43.7 (1.71-1.72)
2.0-2.5 (.08-.10)	43.7-44.1 (1.72-1.74)
2.5-3.0 (.10-.12)	44.1-44.4 (1.74-1.75)

Options and Features



Rotary 18 Position

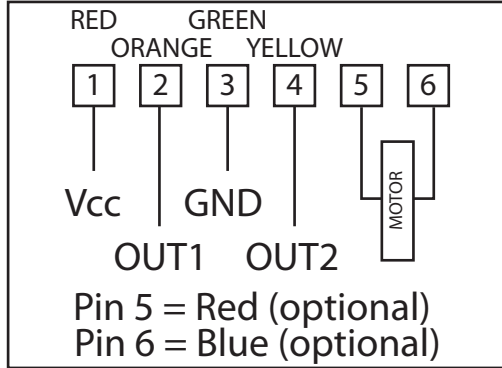


Rotary 12 & 14 Position

Ordering Information

1. Series	ARL												
2. Style	<ul style="list-style-type: none"> A. Variable Resistor Slide : to operate, place your finger on the illuminated point of the display and drag it to the new desired location B. Encoder, Touch Anywhere : to operate, place your finger on the desired location on the display and the illumination will appear at place of touch 												
3. Additional Pushbutton Switch	<ul style="list-style-type: none"> A. Momentary or toggle function B. Optional vibration motor C. LED color in normal position : red, green, yellow or blue D. LED color when pressed : red, green, yellow or blue E. User defined symbol : POWER, ON/OFF, other 												
4. Enclosure Color	A. White or black												
5. Illumination Style	<table border="0"> <tr> <td>Rectangle</td> <td>Rotary</td> </tr> <tr> <td>A. Illuminated Rectangles</td> <td>A. Circular Ring - 18 position</td> </tr> <tr> <td>B. Illuminated Circles</td> <td>B. Illuminated Alpha Numeric Digits - 18 position</td> </tr> <tr> <td>C. Illuminated Alpha Numeric Digits</td> <td>C. Low to High Arrow - 12 & 14 position</td> </tr> <tr> <td>D. Horizontal Dashes</td> <td>D. Custom Illumination Style</td> </tr> <tr> <td>E. Custom Illumination Style</td> <td></td> </tr> </table>	Rectangle	Rotary	A. Illuminated Rectangles	A. Circular Ring - 18 position	B. Illuminated Circles	B. Illuminated Alpha Numeric Digits - 18 position	C. Illuminated Alpha Numeric Digits	C. Low to High Arrow - 12 & 14 position	D. Horizontal Dashes	D. Custom Illumination Style	E. Custom Illumination Style	
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D. Horizontal Dashes	D. Custom Illumination Style												
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6. Legend	<ul style="list-style-type: none"> A. Alpha Numeric Digits B. Printing Color : white, black or custom color 												
7. Timer *only available with Rotary Style	<ul style="list-style-type: none"> A. Interval count down timer 5 seconds per position B. Interval count down timer 1 minute per position C. Contact factory for additional time intervals 												
8. LED Block 1	A. Red, green, yellow or blue												
9. LED Block 2	A. Red, green, yellow or blue												
10. LED Block 3	A. Red, green, yellow or blue												
11. Optional Illuminated Logo (not available with rectangle style)	<ul style="list-style-type: none"> A. User defined symbol B. LED color : red, green, yellow or blue 												
12. Wire Leads	<ul style="list-style-type: none"> A. 5 conductor colored 20AWG ribbon cable : specify length B. Custom wire assembly with connector 												
13. Part Number :	A. Assigned by factory												

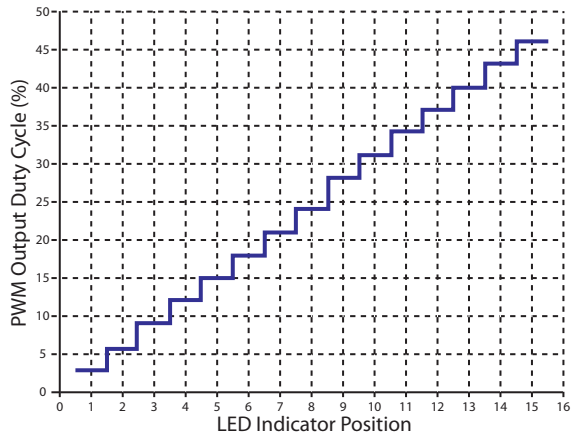
Output Characteristics



PWM Output Duty Cycle vs LED Indicator Position

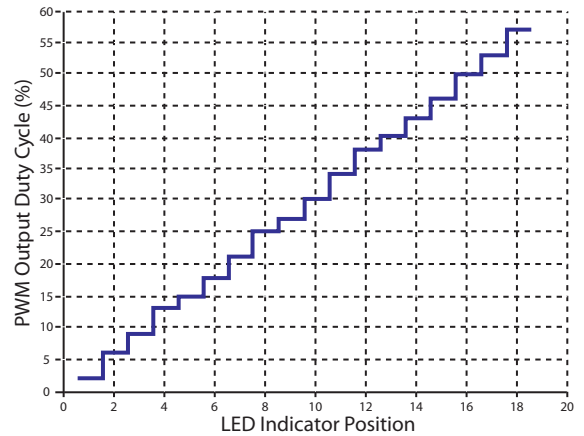
Rectangle (15 position)

Output Characteristics (OUT1)



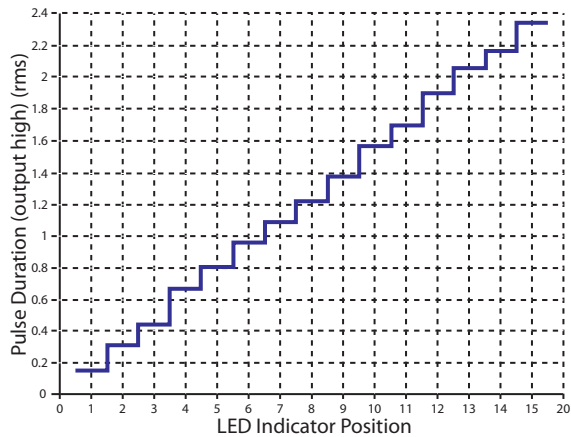
Rotary (18 position)

Output Characteristics (OUT1)



Pulse Duration vs. Indicated Position for all Models

PWM Pulse Duration (OUT1)



Rotary (14 position)

Output Characteristics (OUT1)

