

**Series 600**  
High Accuracy  
ADTs

**上海江晶翔电子有限公司**

The Series 600 Angular Displacement Transducers (ADT's) are precision differential capacitors. These transducers do not have the edge effects and dimensional instability characteristic of traditional capacitive devices. The sensing element is coupled to a solid state oscillator, demodulator, and amplifier to yield DC input — DC output performance.

These transducers deliver a high level analog DC voltage directly proportional to shaft angular displacement with a high degree of conformity. Rotation is continuous and there is no reactive torque. Reliable performance is assured by the absence of any high speed rubbing contacts.



**KEY FEATURES**

- Ranges from  $\pm 30^\circ$  to  $\pm 60^\circ$
- Absolute Measurement
- Non-linearity < 0.05%
- DC Voltage Operation

**SPECIFICATIONS**

MODEL NO.	DISPL. RANGE +CW, -CCW	LINEARITY*	MAX. USABLE RANGE	LINEARITY USABLE RANGE	OUTPUT VDC	INPUT/ OUTPUT CURVE	TYPICAL TEMP. COEF. SPAN/°F
0600-0000	$\pm 30^\circ$	$\pm 0.05\%$	$\pm 40^\circ$	$\pm 0.10\%$	100 mV/°	1	-0.01%
0601-0000	10° -70° CW	$\pm 0.05\%$	0° -80° CW	$\pm 0.10\%$	100 mV/°	2	-0.015%
0602-0000	10° -70° CCW	$\pm 0.05\%$	0° -80° CCW	$\pm 0.10\%$	100 mV/°	3	-0.01%
0603-0000	$\pm 60^\circ$	$\pm 0.10\%$	$\pm 80^\circ$	$\pm 0.15\%$	100 mV/°	4	-0.01%
0603-0001	$\pm 60^\circ$	$\pm 0.05\%$	$\pm 80^\circ$	$\pm 0.10\%$	100 mV/°	4	-0.01%
0603-0002	20° -140° CW	$\pm 0.10\%$	0° -160° CW	$\pm 0.15\%$	50 mV/°	5	-0.015%
0603-0003	20° -140° CW	$\pm 0.05\%$	0° -160° CW	$\pm 0.10\%$	50 mV/°	5	-0.015%
0603-0004	20° -140° CCW	$\pm 0.10\%$	0° -160° CCW	$\pm 0.15\%$	50 mV/°	6	-0.01%
0603-0005	20° -140° CCW	$\pm 0.05\%$	0° -160° CCW	$\pm 0.10\%$	50 mV/°	6	-0.01%

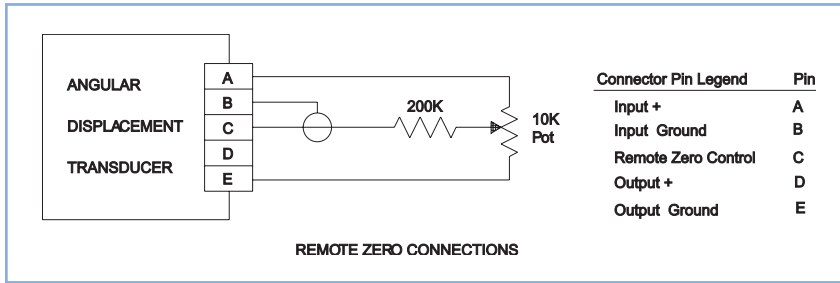
\*Definition: Zero Base Terminal Average, expressed as a max % deviation of total range.

CW defined as clockwise direction of shaft rotation, when viewed from shaft end.

**COMMON ELECTRICAL SPECIFICATIONS**

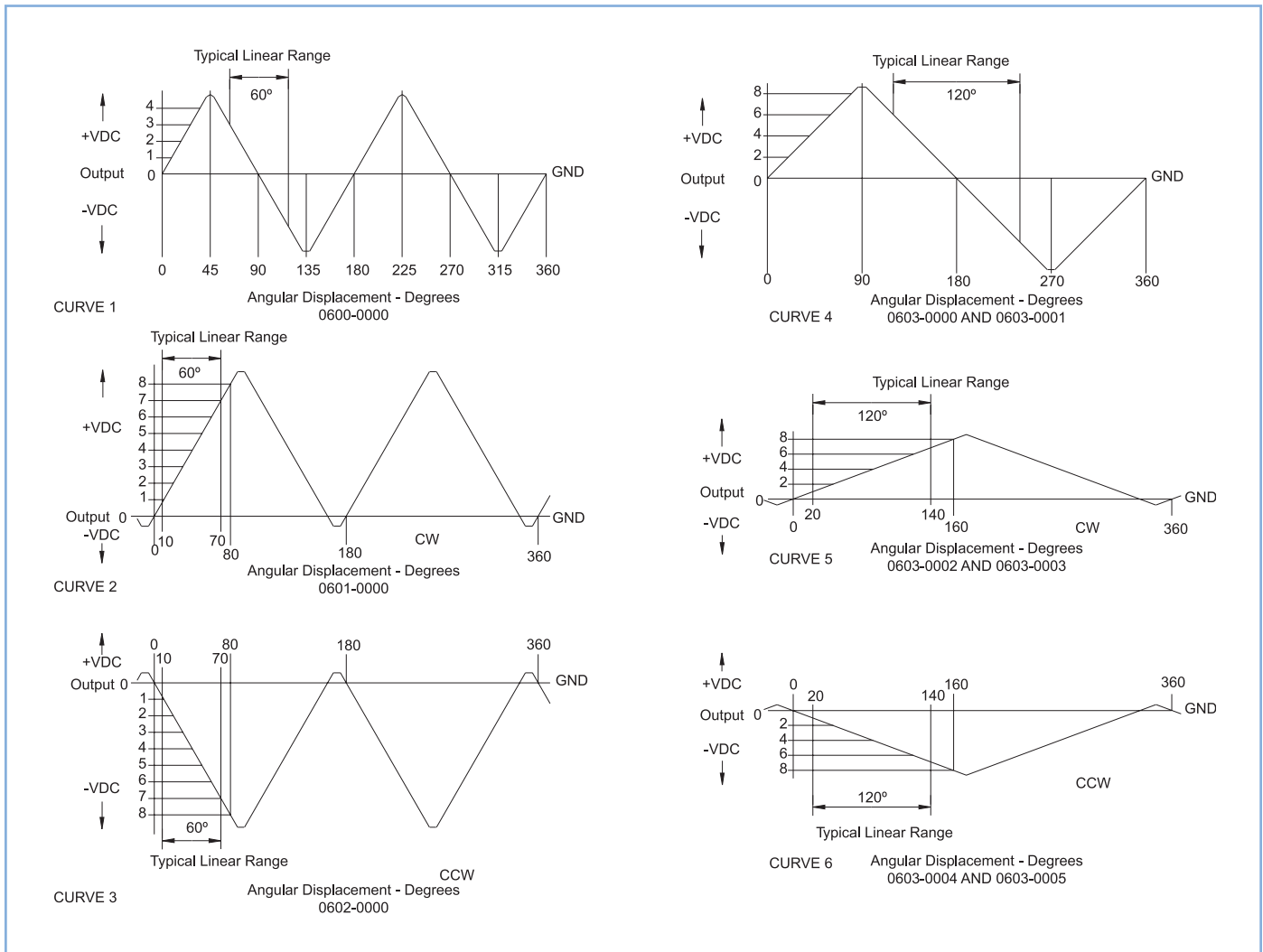
REPEATABILITY	< .01%	INTERNAL CARRIER FREQUENCY	400 KHz
RESOLUTION	Infinite	RIPPLE, MAX.	20 mV P/P 400 KHz
CURRENT, INPUT	30 mA Max.	ZERO ADJUSTMENT	$\pm 3^\circ$
IMPEDANCE, OUTPUT	< 2 Ohms	ZERO POSITIONS	See Output Curves
MAX. ANGULAR VELOCITY	1,440°/sec	FREQUENCY RESPONSE	> 1500 Hz
MAX. ANGULAR VELOCITY with output down < 2%	18,000°/sec available (see "Ordering Information", pg. 53)	EXCITATION VOLTAGE Input > 18 VDC may damage unit	15.00 VDC (see options, pg. 53)
INPUT POLARITY PROTECTED		OUTPUT SHORT CIRCUIT PROTECTED	

### REMOTE ZERO OPERATION



Unless operating in a noise free environment, the lead to pin C must be shielded, as shown. The existing zero adjust potentiometer in the Angular Displacement Transducer must be rotated fully clockwise before the remote zero control can function correctly. This remote function is useful in applications where it is inconvenient to access the adjustment screw on the transducer housing.

### INPUT - OUTPUT CURVES





### ORDERING INFORMATION

Model #	S-Number	Description												
060_ - 000_	S - 0 0 0													
		<table border="1"> <thead> <tr> <th>TEMPERATURE</th> <th>ANGULAR VELOCITY/ STARTING TORQUE</th> <th>SEALING</th> </tr> </thead> <tbody> <tr> <td>1 +32° to +167°F</td> <td>1 Standard</td> <td>1 General Purpose</td> </tr> <tr> <td>2 -67°F to +257°F</td> <td>2 Max Angular Velocity: 18,000°/sec</td> <td>2 Splashproof</td> </tr> <tr> <td></td> <td>3 Max Angular Velocity: 18,000°/sec; Starting torque: 0.5 gm. cm.<sup>1</sup></td> <td></td> </tr> </tbody> </table>	TEMPERATURE	ANGULAR VELOCITY/ STARTING TORQUE	SEALING	1 +32° to +167°F	1 Standard	1 General Purpose	2 -67°F to +257°F	2 Max Angular Velocity: 18,000°/sec	2 Splashproof		3 Max Angular Velocity: 18,000°/sec; Starting torque: 0.5 gm. cm. <sup>1</sup>	
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Notes: 1. The shaft OD is reduced to 0.125 Inches (3.18 mm).

The following options are available at the time of purchase:

- Units will be factory calibrated to your specified excitation voltage, ranging from 12 to 16 VDC to provide an output as stated in the electrical specifications per listed model number. The standard is 15 VDC
- Factory calibration to any other specified output sensitivity, providing the required maximum output voltage is 4 VDC less than the input voltage (12 to 16 VDC)
- Zero offset other than the standard models listed ranging from 0° to ±30° (0600-0000) to 0 to ±60° (0603-0000) can be ordered providing that the maximum output voltage is 4 VDC less than the supply voltage (12 to 16 VDC)

### SALES OPTIONS

Option #	Description
X0016:	Vibration Protection - Internal electronics are encapsulated in RTV to prevent free movement during high vibration and/or shock
X0033:	Material modification for operation in a vacuum environment; Span and Zero pots are replaced by fixed resistors
X0035:	Increase axial load tolerance to 14 pounds; not available with high speed option
X0042:	Optional side connector configuration; replaces axial connector; see diagram below

### DIMENSIONAL DRAWING

