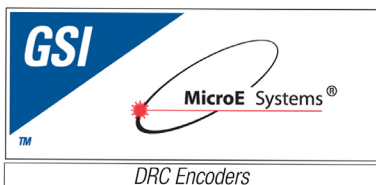


MODEL SST Short Stroke Linear Encoder



- 2" or 4" stroke lengths
- Resolutions of .0001" or .000050" (English). .002 mm or .001 mm (Metric)
- Spring loaded, ball tip probe for easy mechanical interface
- LED light source

The Model SST is a fully enclosed, short stroke linear encoder offering resolutions of .000050", .0001", .001mm, .002 mm (when used with external 4X circuitry). Designed for applications requiring a simple mechanical interface, the Model SST is available with a spring loaded probe and a ball tip. This arrangement allows the user to install and align the Model SST in a matter of minutes. In its standard configuration, the Model SST is dust resistant, making it suitable for use in relatively clean environments such as semiconductor wafer processing and general metrology applications. For the harsh environments imposed by machine tool and process control applications, the Model SST is available in a splash resistant configuration. The Model SST's complementary TTL compatible outputs provide high immunity to ambient noise and are easily interfaced to multiplication circuits and conventional up/down logic. An optional zero reference output can be specified at the beginning or end of the travel or at 1" intervals throughout the stroke length.



SST SPECIFICATIONS

ELECTRICAL

Resolution range:	English units – 2,500 or 5,000 cycles per inch (.0001” or .00005” with quadrature). Metric units – 125 or 250 cycles per mm (.002 mm or .001 mm with quadrature).
Light source:	Gallium aluminum arsenide L.E.D. rated @ 100,000 Hrs. MTBF (mfg's spec).
Light sensor:	Photodiode.
Excitation voltage:	+5Vdc, +12Vdc, +15Vdc, +24Vdc ± 5%.
Output format:	Two count channels (A & B) in phase quadrature with an optional ZR output. The complements to all outputs are provided.
Quadrature:	90° ± 30° (in the analog state).
Symmetry:	180° ± 18° (in the analog state).
Rise and fall time:	1 microsecond max. into 1,000pf load capacitance. Note: Units with line driver output the rise and fall time vary with line and load capacitance.
Zero reference width:	The zero reference is gated to 1/4 count channel cycle in width.
Phase sense:	Channel B leads channel A as the probe is depressed into the encoder body.
Pin connections:	See table 1.
Output specifications: (See Figure 1)	The SST is available with one of three output stages: 9638* (RS 422 compatible) differential line driver providing 40 ma. sink and –40 ma. source current. 7404* inverter providing 16 ma. sink and –400 ua. source or a 7406* open collector inverter with 40 ma. / 30 Volt. Capability. (When the 7406* is utilized, no pull-up resistors are provided in the unit). All outputs are TTL compatible.

MECHANICAL

Probe Loading:	Max. allowable side loading with the probe in the extended position is 2.0 ounces.
Operating force:	4” units – 2.5 pounds (nominal) 2” units – 1.75 pounds (nominal). (These figures assume that the SST is mounted horizontally).
Mass:	.0077 oz. Sec. sq. per in. (maximum).
Maximum velocity:	20 inches per second.
Max. acceleration:	100 inches per second.
Ball tip:	Starret 247D (.187” diameter).
Connector / cable:	The SST is available either cable egress (24”, 42”, or 96” +/- 1” lengths) or with a choice of three connectors: 9-pin AMP* 206486-1 shell with 66570-3 pins: 10-pin Cannon* KPT02-E12-10P; or 9-pin Amphenol* 165-15.
Mating connector:	Applicable mating connectors are AMP 206485* shell, 66569-3* socket and 206062-1* cable clamp, Cannon KPT06-F12-10S* or Amphenol 165-41* respectively.
Glass scale resolution:	English units – 1250 lines per inch. Metric units – 62.5 lines per millimeter.
Weight:	1.8 pounds for 2 inch stroke units. 2.5 pounds for 4 inch stroke units.
Sealing system:	Standard – dust resistant via gaskets. Optional – (for harsh environments) – splash resistant via gaskets and sealants with on oil seal to protect the probe exit point.
Probe material:	Chrome plated steel.
Error:	+/- 1.0 bits (maximum) based upon external 4x counting circuitry for 100 u inches and 2 u meter resolution units. +/- 2.0 bits (maximum) based upon external 4x counting circuitry for 50 u inches and 1 u meter resolution units.

ENVIRONMENTAL

Operating temperature:	0°C to +70°C
Storage temperature range:	-25°C TO +90°C
Shock:	50 G for 11 millisecond duration.
Vibration:	20 Hz to 2000 Hz @ 5 G.
Humidity:	To 98% R.H. (non-condensing).

* or performance equivalent

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

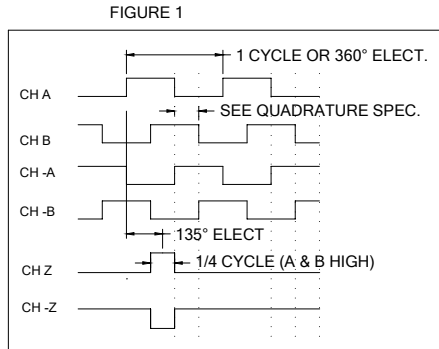
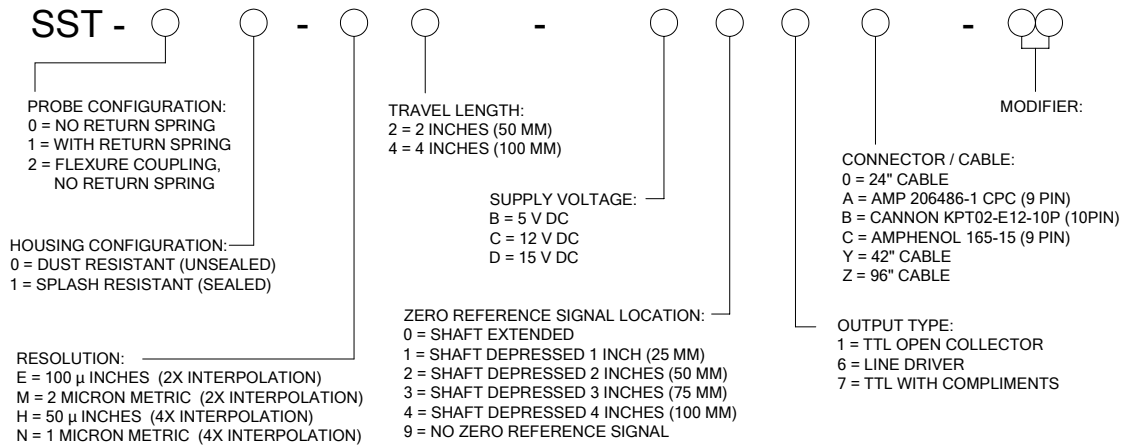
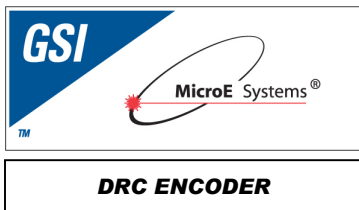
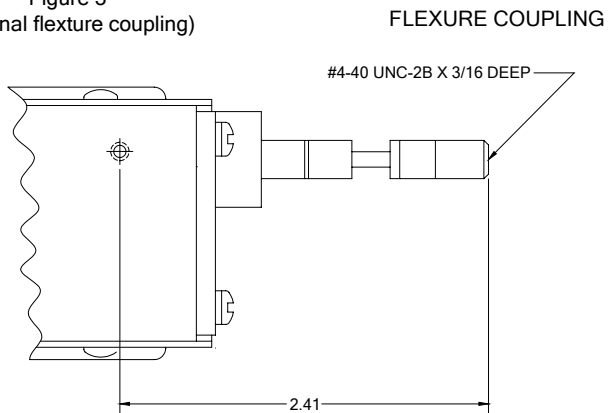


TABLE 1

CHANNEL	AMP 9 PIN	CANNON 10 PIN	AMPHENOL 9 PIN	WIRE COLOR
+A	9	A	A	ORANGE
-A	5	K	K	GREEN
+B	7	B	B	YELLOW
-B	1	E	E	BLUE
ZR	4	C	C	BROWN
-ZR	8	J	J	GREY
+5 V DC	6	H	H	RED
COMMON	2	D	D	BLACK
SHIELD	3	F	F	DRAIN WIRE
SPARE	-	G	-	-

Figure 3
(Optional flexure coupling)



SST MOUNTING DIMENSIONS

NOTE:
 SURFACES -B- AND -C- ARE MOUNTING PLAINS.
 BOTH SURFACES ARE PARALLEL TO THE AXIS OF MOTION WITHIN
 .005 T.I.R.
 TWO PLACE DECIMALS HAVE A TOLERANCE OF ± 0.01 INCHES.
 THREE PLACE DECIMALS HAVE A TOLERANCE OF ± 0.005 INCHES.

