CURTIS

Accessories

Steering Sensors

Model SS

Model SS

Steering Sensors

Curtis Steering Sensor Units replace conventional steering columns on steer-by-wire electric power steering systems. They are fully integrated electromechanical units consisting of a shaft, bearings and sensors. Steering Sensor Units convert the mechanical movement of the steering wheel into a dual-redundant electrical signal that provides steering wheel position, steering speed and direction data to the steering control system.

See a 360° view of the SS Model at:
curtisinstruments.com/360view

FEATURES

- Fully compatible and recommended for use with the Curtis Model 1222 AC steering controller.
- Dual sensor outputs support the redundant safety architecture of steer-by-wire systems.
- Allows compliance with the latest international functional safety standards when used with the Model 1222 AC steering controller.
- Sealed, maintenance-free integrated casing eliminates need for additional bearings, shafts, gear assemblies or other mechanical components.
- No adjustment or lubrication required.
- Compact flanged design allows simple mounting on the vehicle without expensive tooling. Simply mount the Steering Sensor Unit on the vehicle, make the electrical connections to the control system, and fit a steering wheel directly to the shaft.
- Integrated electrical connectors reduce vehicle assembly time, simplify wiring and improve environmental protection.
- Non-contact Hall Effect sensor technology does not wear and provides immunity from external influences for maximum reliability and accuracy.
- Constant stiffness models are available with different torque ratings to allow use with steering wheels of different diameters to provide the correct steering 'feel' for the application.
- Model SS-0003 features a variable steering torque or 'stiffness' thereby delivering tactile feedback to the vehicle operator.
  - Curtis Model 1222 steering controller features a fully programmable output driver to control the variable steering torque.
  - Functions such as lock-to-lock end stops and steering stiffness proportional to vehicle speed can be programmed.

SS-0001

SS-0003

SS-0002

Model SS

Steering Sensors

SPECIFICATIONS

		SS-0001	SS-0002	SS-0003
Mechanical	Weight (kg)	.55	.52	2.36
	Friction Torque (Nm)	0.20	0.08	5.0
	Max Axial Force (N)	1700	1700	1500
	Connector	AMP	AMP	Deutsch
	Cable (AWG)	24	24	20
Electrical	Supply Voltage - Sensor (V)	4.5 – 28.0	4.5 – 28.0	5.0 ± 0.5
	Supply Voltage – Brake (V)	N/A	N/A	12.0
	Supply Current - Sensor (mA)	15 – 25	15 – 25	8.5 (typ)
	Supply Current – Brake (Amp)	N/A	N/A	0.5(cont) – 1.0 (int)
	Output Voltage (V)	4.5 – 28.0	4.5 – 28.0	0.5 – 4.5
	Max Rotation Speed (rpm)	300	300	180
	Output Accuracy	± 8%	± 8%	2.0 °
Environmental	Operating Temperature Range (°C)	–40° – +85°	–40° – +85°	–35° – +80°

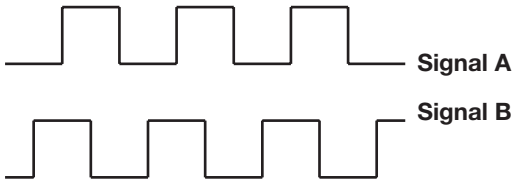
Model SS

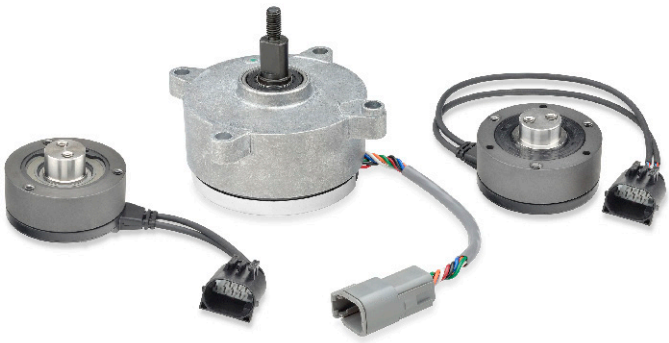
Steering Sensors

SIGNAL OUTPUT DIAGRAMS

Models SS-0001 and SS-0002

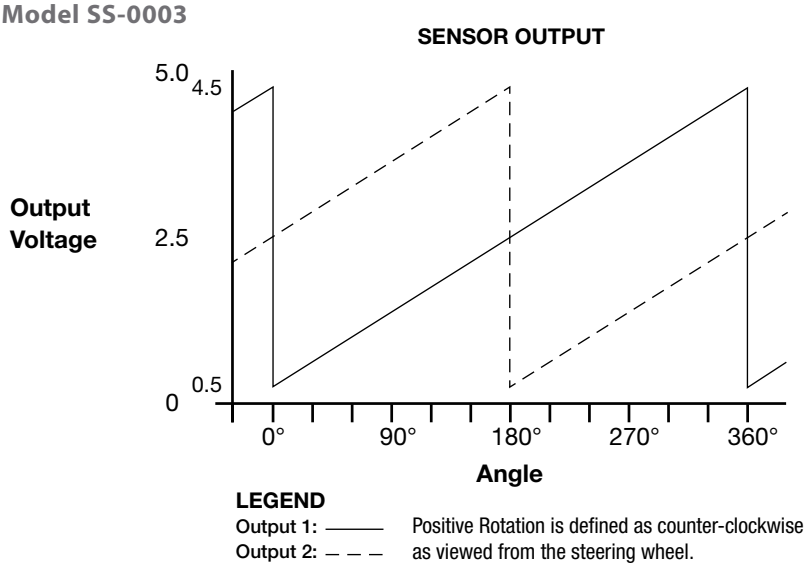
Counter-clockwise rotation of the shaft,
viewed from the steering wheel side.





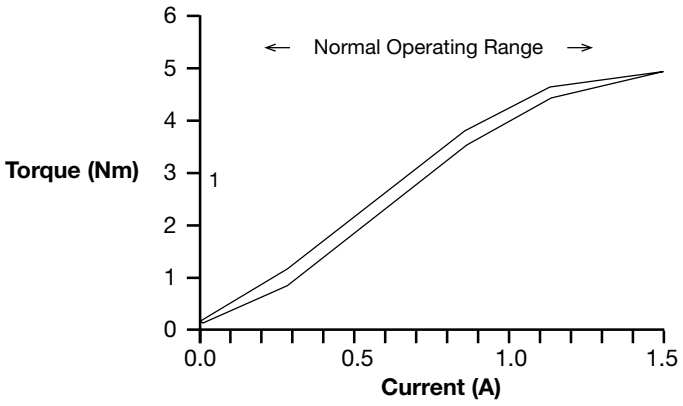
The unit delivers 2 independent pairs of signals.
Each of the signal pair fulfills the same function.

Model SS-0003



TYPICAL TORQUE CHARACTERISTICS

Model SS-0003



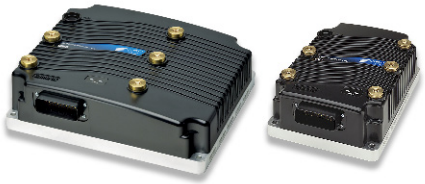
Model SS

Steering Sensors

SYSTEM ACCESSORIES

The Curtis Model 1222 is an AC induction motor controller for 'steer by wire' electric power steering systems featuring highly flexible I/O and a dual micro, fully redundant design for maximum safety.

Curtis Model FP foot pedals are extremely reliable and sealed to IP66. They are available in a wide variety of configurations and are ideal for electronic throttle control in harsh industrial vehicle applications.



Curtis AC motor speed controllers provide highly efficient control of AC induction motors performing traction drive or hydraulic pump duties, and offer the highest levels of functional safety.

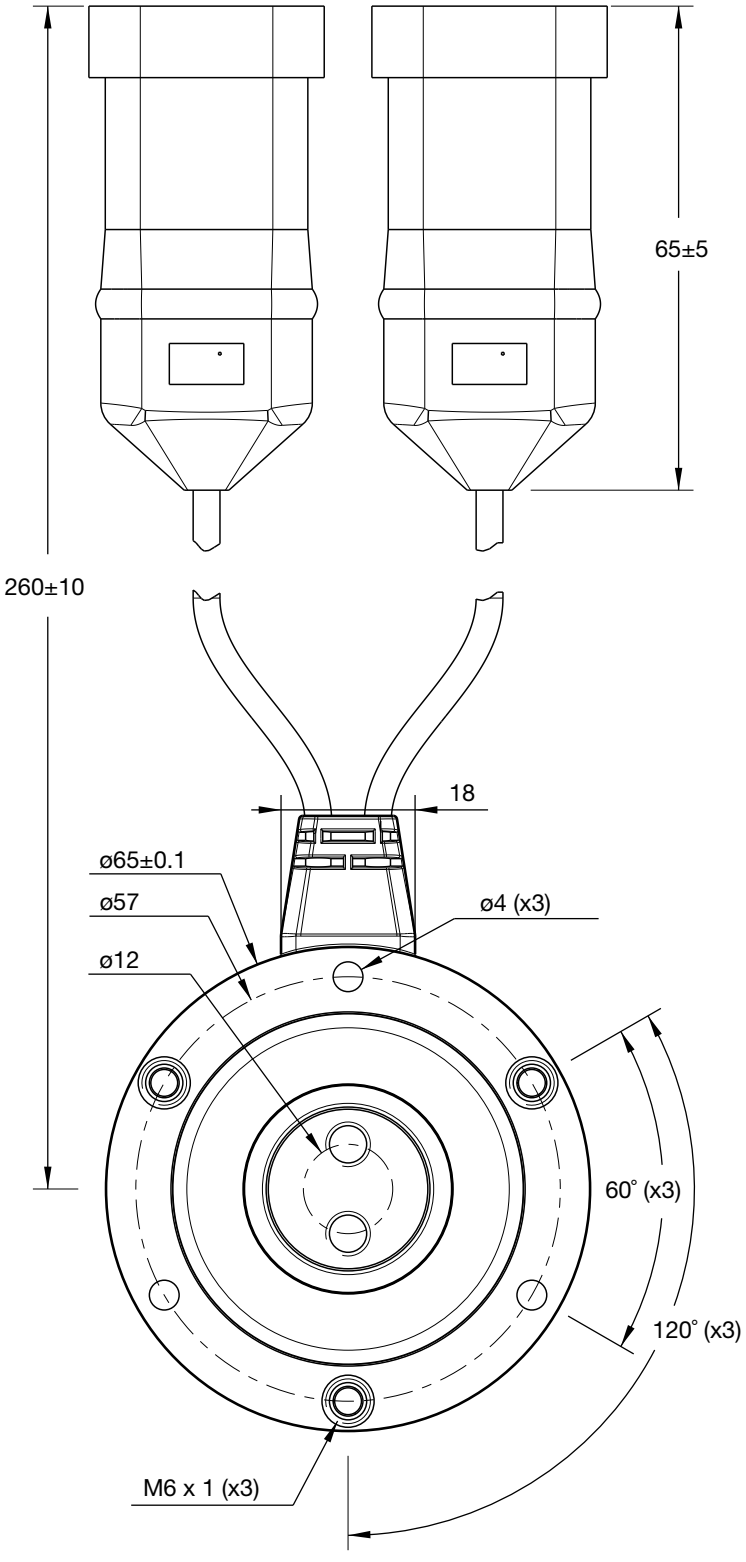
Contact Curtis to obtain the VCL Vehicle Control Language compiler and development tools.

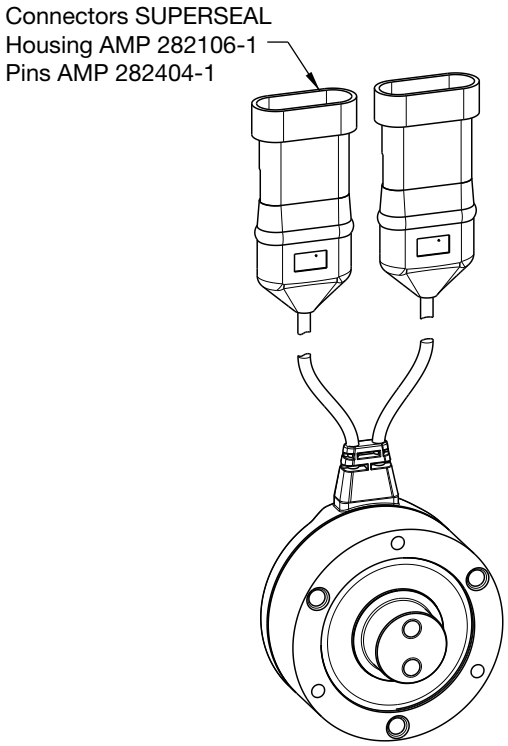
CONNECTOR WIRING

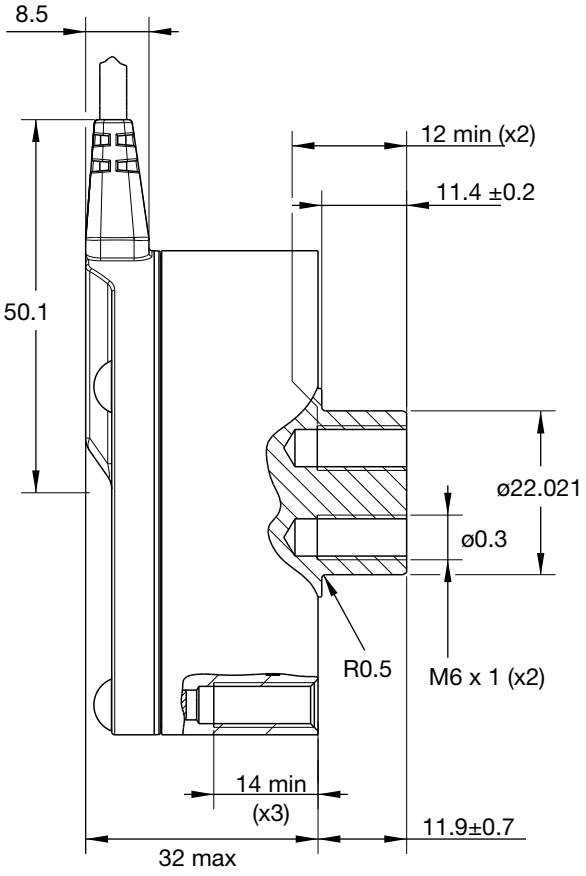
SS-0001			SS-0002			SS-0003		
Pin	**Color**	**Function**	**Pin**	**Color**	**Function**	**Pin**	**Color**	**Function**
1	Red	V+	1	Red	V+ (1)	1	Red	V+ Sensor
2	Blue	Signal B	2	Blue	Signal B1	2	Black	V- Sensor
3	White	Signal A	3	White	Signal A1	3	Green	Output 1
4	Black	Ground	4	Black	Ground 1	4	Orange	Output 2
			5	Red	V+ (2)	5	Blue	V+ Brake Coil
			6	Blue	Signal B2	6	White	V– Brake Coil
			7	White	Signal A2			
			8	Black	Ground 2			

DIMENSIONS mm (typical)

Model SS-0001

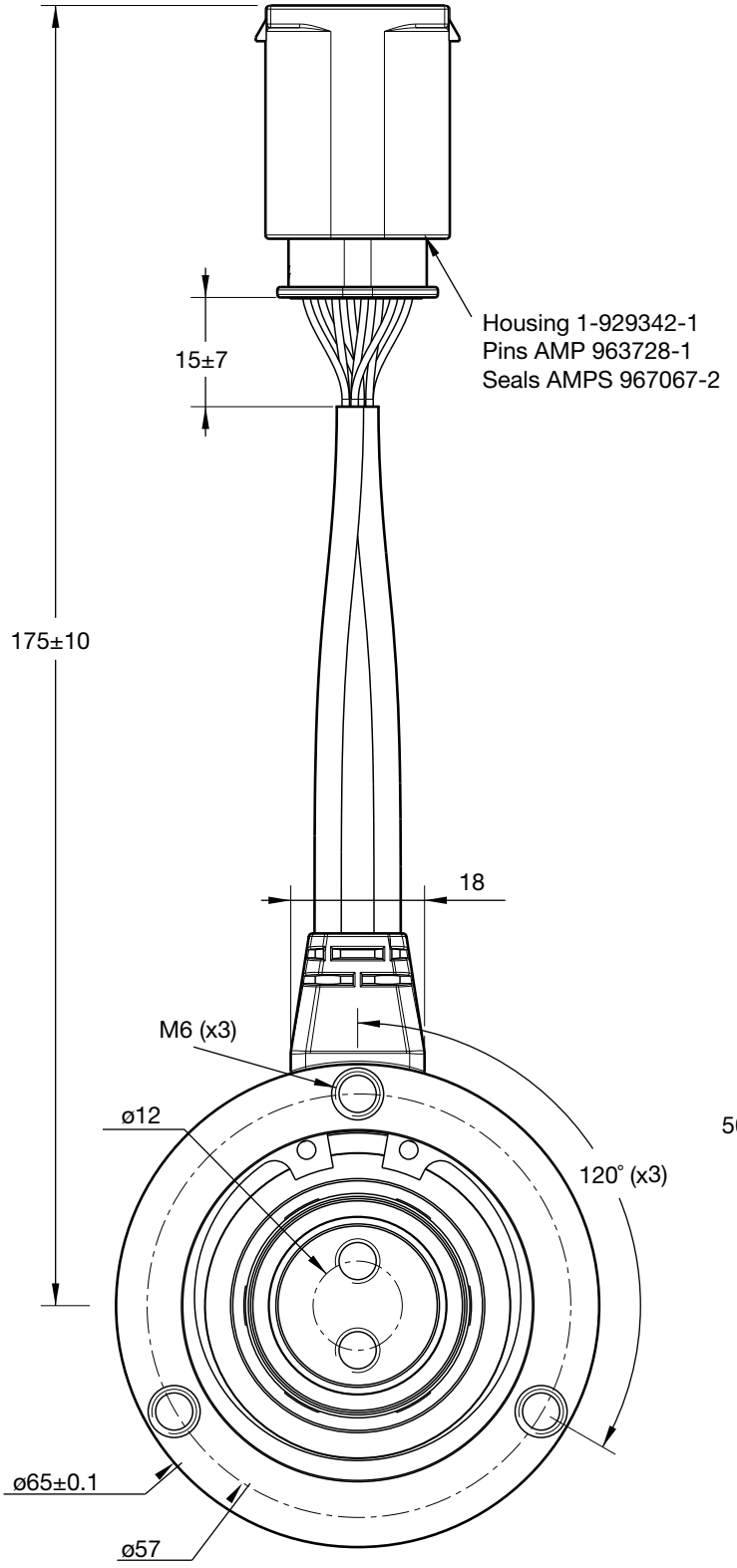


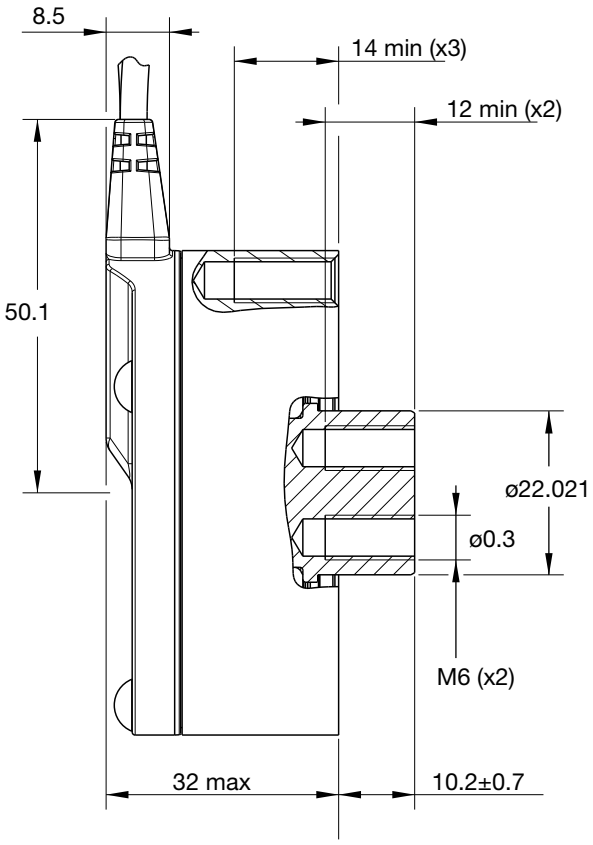




DIMENSIONS mm (typical)

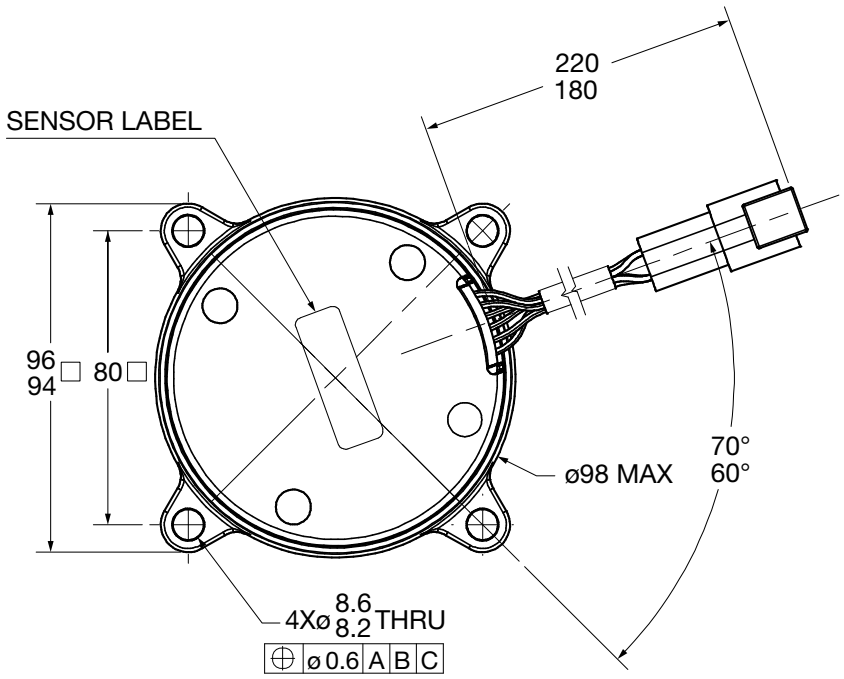
Model SS-0002

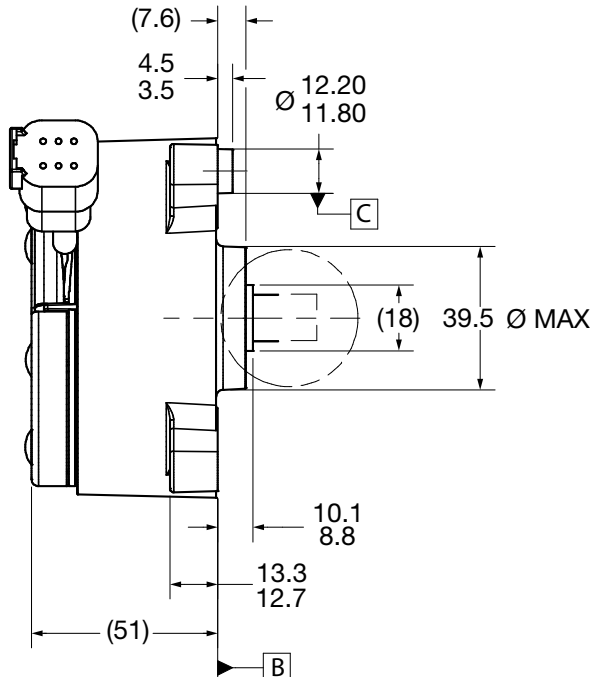


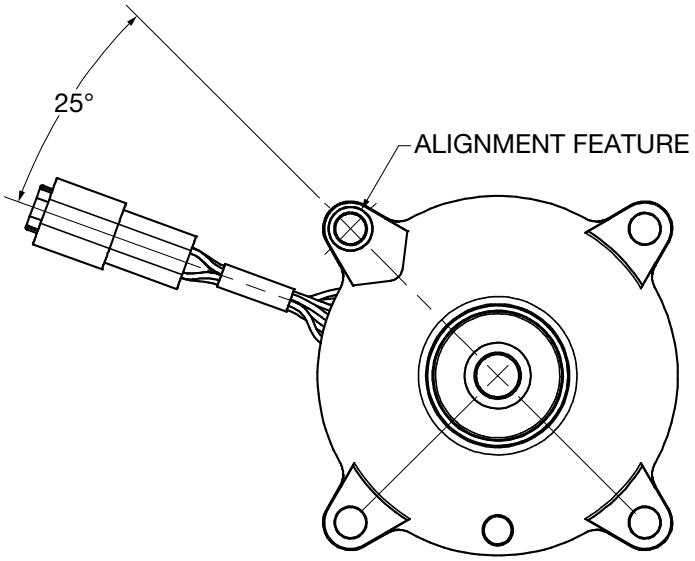


DIMENSIONS mm (typical)

Model SS-0003







WARRANTY Two year limited warranty from time of delivery.

The Curtis Difference
You feel it when you drive it