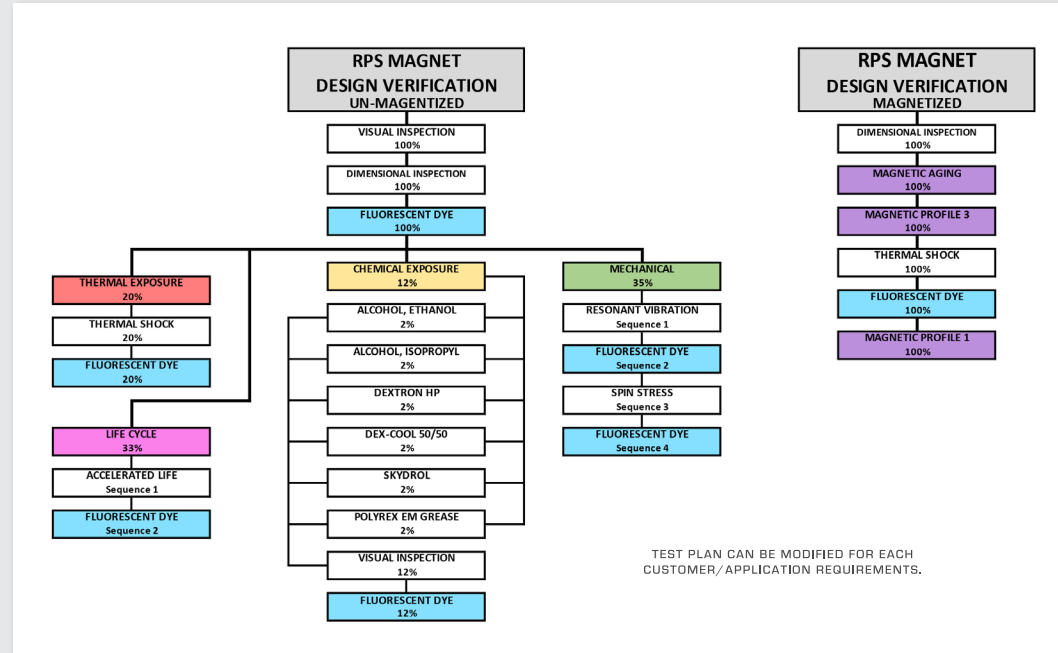
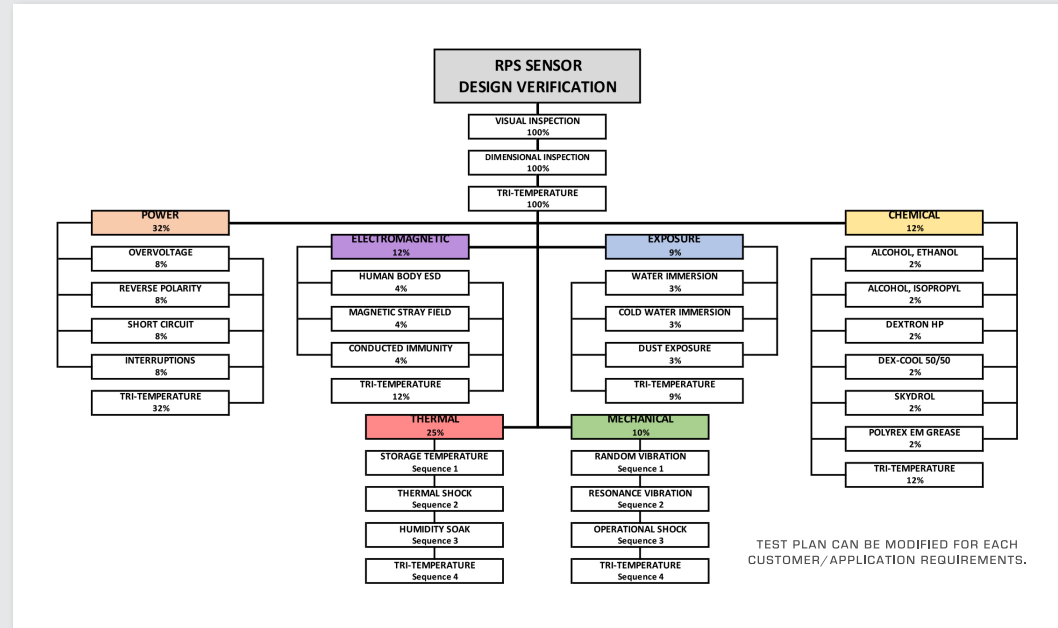


MAGNET DV PLAN




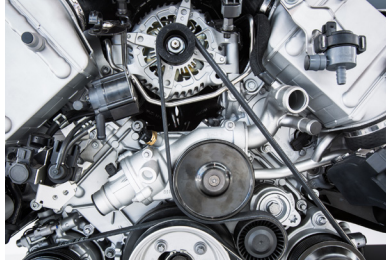









SENSOR DV PLAN



ROTARY POSITION SENSORS APPLICATION GUIDE



ROTARY POSITION SENSORS APPLICATIONS

OVERVIEW/STORY	 Recreational Vehicle E-Motor Rotary Position Sensor	 Automotive Internal Starter Generator Rotary Position Sensor	 E-Motor Rotary Position Sensor for a Drive Shaft Diesel HEV	 High Volume Automotive EV Rotary Position Sensor	 Robust Fluid Cooled Automotive EV Rotary Position Sensor	 Industrial Control High Speed Rotary Position Sensor
IMAGE						
MAGNET PLACEMENT	END OF SHAFT	THROUGH SHAFT	THROUGH SHAFT	END OF SHAFT	THROUGH SHAFT	THROUGH SHAFT
SENSOR PLACEMENT	OFF AXES	OFF AXES	OFF AXES	OFFSET ON AXES	OFF AXES	OFF AXES
PROBE CONFIGURATION ¹	SINGLE PROBE	DUAL PROBE	DUAL PROBE	DUAL PROBE	DUAL PROBE	DUAL PROBE
MAXIMUM RPM	9,500	5,500	4,000	13,000	17,000	30,000
MAGNET DESIGN	RING	RING	RING	DISC	RING	RING
MAGNET POLE PAIRS	8 POLE PAIRS	12 POLE PAIRS	12 POLE PAIRS	4 POLE PAIRS	4 POLE PAIRS	2 POLE PAIRS
POSITION ACCURACY ²	± 1.5° ELECTRICAL ± 0.188° MECHANICAL	± 0.5° ELECTRICAL ± 0.042° MECHANICAL	± 1.5° ELECTRICAL ± 0.125° MECHANICAL	± 0.75° ELECTRICAL ± 0.188° MECHANICAL	± 0.75° ELECTRICAL ± 0.188° MECHANICAL	± 1.0° ELECTRICAL ± 0.5° MECHANICAL
MAGNET MATERIAL	INJECTED NEODYMIUM	BONDED NEODYMIUM	INJECTED NEODYMIUM	INJECTED HARD FERRITE	INJECTED NEODYMIUM	BONDED NEODYMIUM
MAGNET DIMENSIONS ³	OD 26.0 mm ID 20.6 mm HT 8.0 mm	OD 112.0 mm ID 106.0 mm HT 10.0 mm	OD 221.0 mm ID 214.0 mm HT 12.0 mm	OD 34.0 mm ID 8.0 mm HT 5.0 mm	OD 69.0 mm ID 61.0 mm HT 10.0 mm	OD 49.0 mm ID 43.0 mm HT 10.0 mm
MAGNET RETAINER	OVERMOLDED PBT30GF	STEEL YOKE	OVERMOLDED PBT30GF	OVERMOLDED PBT30GF	OVERMOLDED PBT30GF	INSERT MOLDED PBT30GF
ELECTRICAL INTERFACE ⁴	ANALOG SINE/COSINE	DUAL ANALOG SINE/COSINE	DUAL ANALOG SINE/COSINE	DUAL ANALOG SINE/COSINE	DUAL ANALOG SINE/COSINE	DIFFERENTIAL SINE/COSINE ANALOG COMBINED
ELECTRICAL CONNECTOR	INTEGRATED CONNECTOR	INTEGRATED CONNECTOR	CABLE WITH REMOTE CONNECTOR	INTEGRATED CONNECTOR	INTEGRATED CONNECTOR	INTEGRATED CONNECTOR
ELECTRICAL POWER	5 VDC @ 20 mA	12 VDC @ 10 mA	12 VDC @ 10 mA	5 VDC @ 20 mA	5 VDC @ 20 mA	5 VDC @ 20 mA
OPERATIONAL TEMPERATURE	-40°C – 125°C	-40°C – 150°C	-40°C – 150°C	-40°C – 150°C	-40°C – 150°C	0°C – 85°C
IP RATING	IP69K	IP67	IP67	IP67	IP67	IP65
OTHER ENVIRONMENT	HIGH VIBRATION	-	DEXRON	-	DEXRON	-

NOTES

- ¹ Probe configuration indicates the number of individual magnetic sensors used for higher position accuracy and signal redundancy. ASIL rating will require 2 probes.
- ² Accuracy depends on the magnet design, material, and pole density. Accuracy and non-linearity is determined using a high resolution optical encoder as a reference.
- ³ Magnet Dimensions expressed are the physical dimensions of the magnetic material. Retainers and positioners are designed for the intended application.
- ⁴ Additional Interface options are available such as SENT, SPI, and CAN.