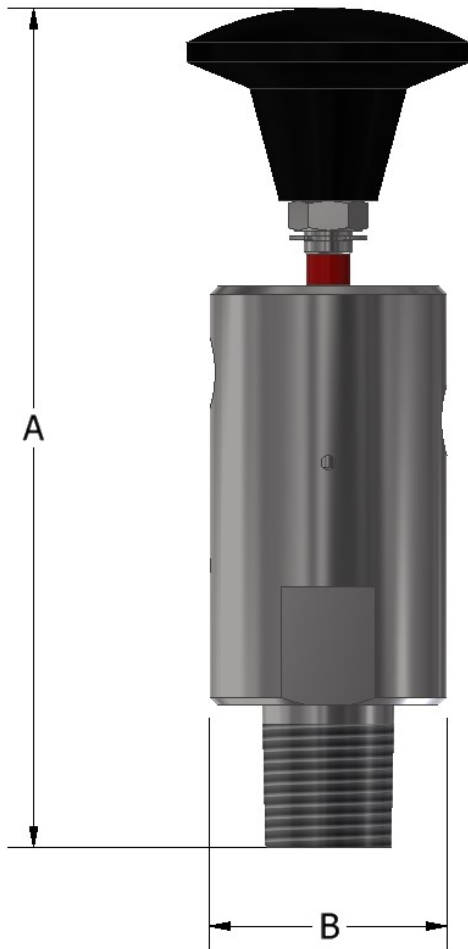


OPERATION

The Ruelco Model Pneumatic Sand Probe Relay uses a thin wall steel probe installed directly in a flowline to detect and indicate that excessive erosion or corrosion has occurred. It utilizes a reliable normally closed block-and-bleed 3-way valve that will vent an instrumentation signal and provide visual indication that the probe has lost pressure integrity. This alerts field personnel that inspection of the flowline and possible repair may be required.



FEATURES

- 316 stainless steel construction meets severe service demands (Models to N.A.C.E MR0175 available)
- Will operate with flowline pressures as low as 100 psi
- Fluorocarbon O-rings are utilized for dependability
- Red Band on shaft provides visual indication that sand probe relay has operated
- Knob provided for manually testing

DIMENSIONS

A	5.32" (135.13 mm)
B	1.50" (38.1 mm)
PROCESS CONNECTION PORT	1/2" NPT
PNEUMATIC PORTS	1/4" NPT

PNEUMATIC SAND PROBE RELAY

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PARTS LIST

ITEM	QUANTITY	DESCRIPTION	MATERIAL
1A	1	BLACK KNOB	PHENOLIC
1B	-	RED KNOB	PHENOLIC
1C	-	GREEN KNOB	PHENOLIC
2	1	LOCK NUT	316 ST. STL.
3*	1	SNAP RING	316 ST. STL.
4*	2	SHAFT O-RING	FLUOROCARBON
5	1	SHAFT	316 ST. STL.
6	1	VALVE BODY	316 ST. STL.
7*	2	PISTON O-RING	FLUOROCARBON

* INDICATES ITEMS IN THE REPAIR KIT

SPECIFICATIONS

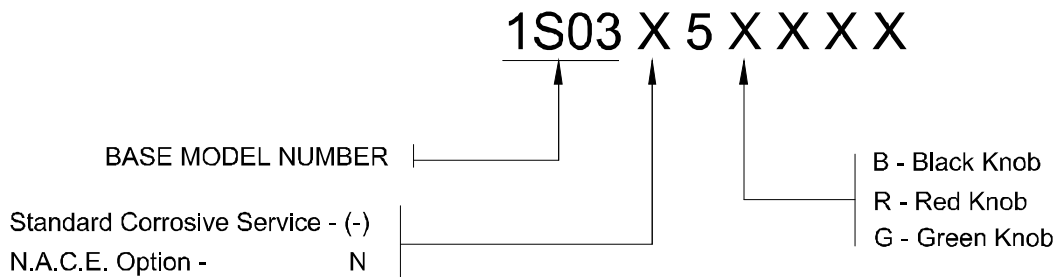
INSTRUMENT MAXIMUM	150 PSI (10.3 BAR)
RELAY OPERATION RANGE (BASED ON PROBE)	100 PSI (6.7 BAR) MINIMUM 10,000 PSI (690 BAR) MAXIMUM
AMBIENT TEMPERATURE RANGE	-20° TO 250° F -29° TO 122° C
Cv FACTOR	.34

REPAIR KIT

- 1S-004-000

OTHER TEMPERATURE RANGES AND SEAL COMPOUNDS AVAILABLE UPON REQUEST

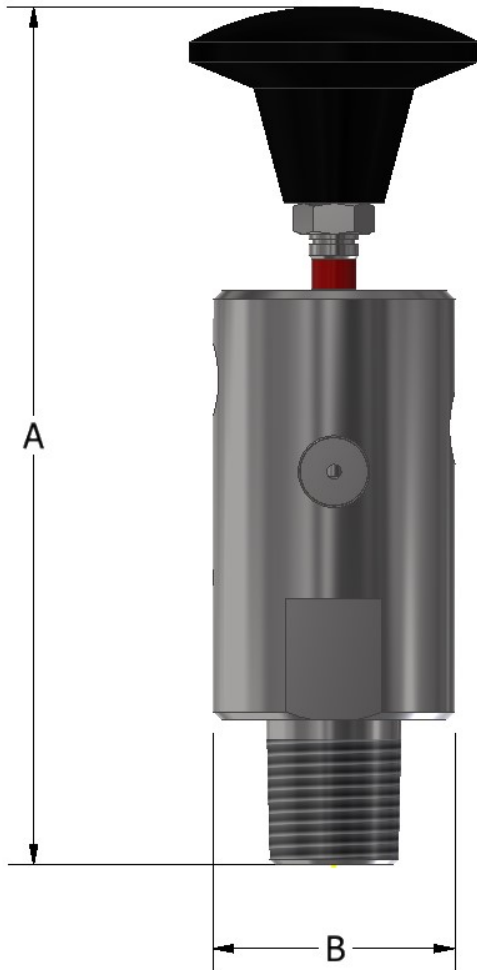
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OPERATION

The Ruelco Hydraulic Sand Probe Relay uses a thin wall steel probe installed directly in a flowline to detect and indicate that excessive erosion or corrosion has occurred. It utilizes a reliable normally closed block-and-bleed 3-way valve that will vent a low pressure hydraulic instrumentation signal and provide visual indication that the probe has lost pressure integrity. This alerts field personnel that inspection of the flowline and possible repair may be required.



FEATURES

- 316 stainless steel construction meets severe service demands (Models to N.A.C.E MR0175 available)
- Will operate with flowline pressures as low as 100 PSI
- Fluorocarbon O-rings are utilized for dependability
- Red Band on shaft provides visual indication that sand probe relay has operated
- Knob provided for manually testing

DIMENSIONS

A	5.32" (135.13 mm)
B	1.50" (38.1 mm)
PROCESS CONNECTION	1/2" NPT
HYDRAULIC PORTS	1/4" NPT

HYDRAULIC SAND PROBE RELAY

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PARTS LIST

ITEM	QUANTITY	DESCRIPTION	MATERIAL
1A	1	BLACK KNOB	PHENOLIC
1B	-	RED KNOB	PHENOLIC
1C	-	GREEN KNOB	PHENOLIC
2	1	LOCK NUT	316 ST. STL.
3*	1	SNAP RING	316 ST. STL.
4*	2	SHAFT O-RING	FLUOROCARBON
5	1	SHAFT	316 ST. STL.
6	1	VALVE BODY	316 ST. STL.
7*	2	PISTON O-RING	FLUOROCARBON

* INDICATES ITEMS IN THE REPAIR KIT

SPECIFICATIONS

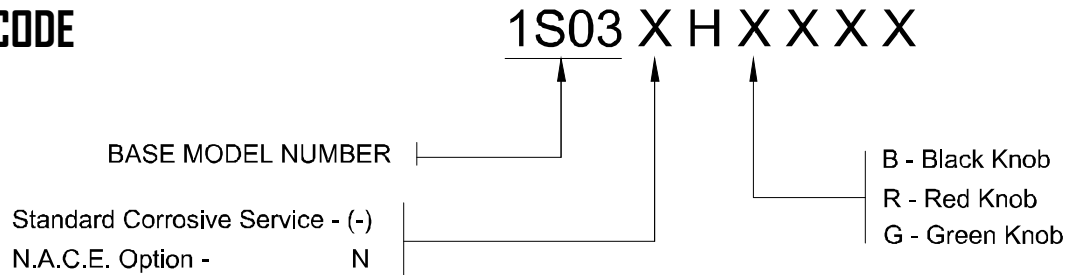
INSTRUMENT MAXIMUM	150 PSI (10.3 BAR)
RELAY OPERATION RANGE (BASED ON PROBE)	100 PSI (6.7 BAR)
	MINIMUM
	10,000 PSI (690 BAR)
AMBIENT TEMPERATURE RANGE	MAXIMUM
	-20° TO 250° F
	-29° TO 122° C
Cv FACTOR	.34

REPAIR KIT

- 1S-004-000

OTHER TEMPERATURE RANGES AND SEAL COMPOUNDS AVAILABLE UPON REQUEST

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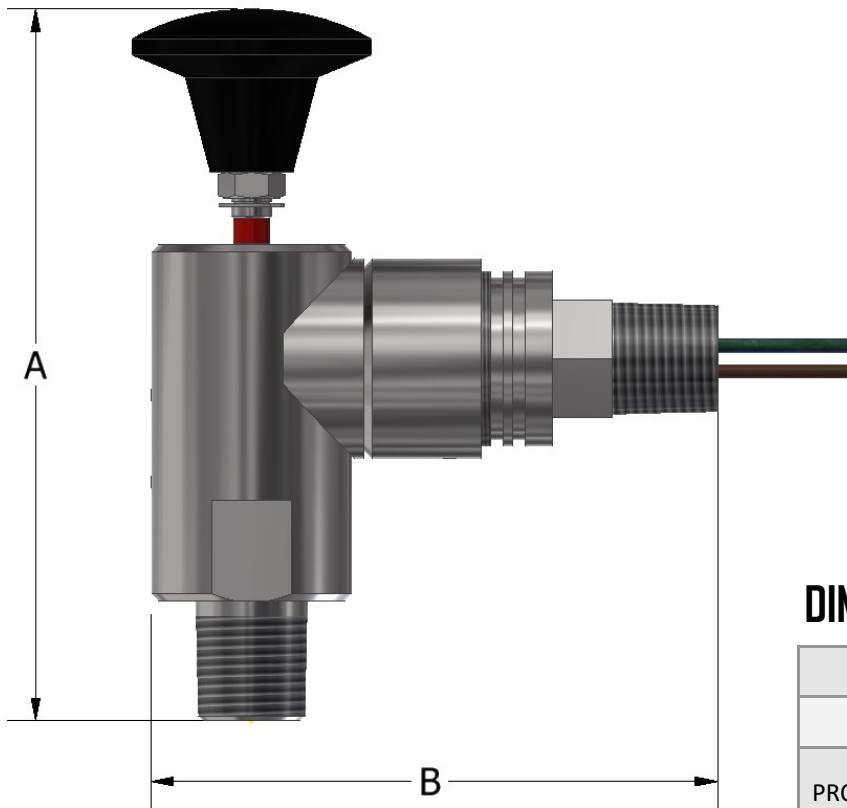
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OPERATION

The Ruelco Electric Sand Probe relay uses a thin wall steel probe installed directly in a flowline to detect and indicate that excessive erosion or corrosion has occurred. It utilizes a reliable hazardous location, hermetically sealed reed switch and red indication band to provide an electric signal and visual indication that the probe has lost pressure integrity. This alerts field personnel that inspection of the flowline and possible repair may be required. The electric switch can be set either normally open or normally closed depending on the electric connections used.

FEATURES

- 316 stainless steel construction meets severe service demands (Models to N.A.C.E MR0175 available)
- Will operate with flowline pressures as low as 100 psi
- Fluorocarbon O-rings are utilized for dependability
- Red Band on shaft provides visual indication that sand probe relay has operated
- Knob provided for manually testing



DIMENSIONS

A	5.32" (135.13 mm)
B	4.33" (110 mm)
PROCESS CONNECTION	1/2" NPT
ELECTRIC CONNECTION	1/2" NPT

ELECTRIC SAND PROBE RELAY

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ELECTRICAL OPERATION

LEAD	COLOR	RISING LEVEL	FALLING LEVEL
NO / NO2	BLUE / PURPLE	CLOSES	OPENS
NC / NC2	RED / BLACK	OPENS	CLOSES
C / C2	BROWN / YELLOW	COMMON LEADS	
GND	GREEN	GROUND	

ELECTRICAL SPECIFICATIONS

SPDT & DPDT SWITCH MAXIMUM VOLTAGE	250 VAC 28 VDC
SPDT & DPDT SWITCH AMPS @ MAXIMUM VOLTAGE	5 AMPS
AMBIENT TEMPERATURE RANGE	-20 TO 158° F -29 TO 70° C

ELECTRICAL CERTIFICATIONS

UNDERWRITERS LABORATORIES	CLASS I, GROUPS A,B,C,D
UNDERWRITERS LABORATORIES	CLASS II, GROUPS E,F,G
ATEX	Ex d IIC

ELECTRIC SAND PROBE RELAY

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PARTS LIST

ITEM	QUANTITY	DESCRIPTION	MATERIAL
1A	1	BLACK KNOB	PHENOLIC
1B	-	RED KNOB	PHENOLIC
1C	-	GREEN KNOB	PHENOLIC
2	1	LOCK NUT	316 ST. STL.
3*	1	SNAP RING	316 ST. STL.
4*	1	SHAFT O-RING	FLUOROCARBON
5	1	SHAFT	316 ST. STL.
6	1	VALVE BODY	316 ST. STL.
7*	2	PISTON O-RING	316 ST. STL.
8	1	PUSH ROD	316 ST. STL.
9A	1	SPDT ELECTRIC SWITCH ASSEMBLY	316 ST. STL.
9B	-	DPDT ELECTRIC SWITCH ASSEMBLY	316 ST. STL.

* INDICATES ITEMS IN THE REPAIR KIT

SPECIFICATIONS

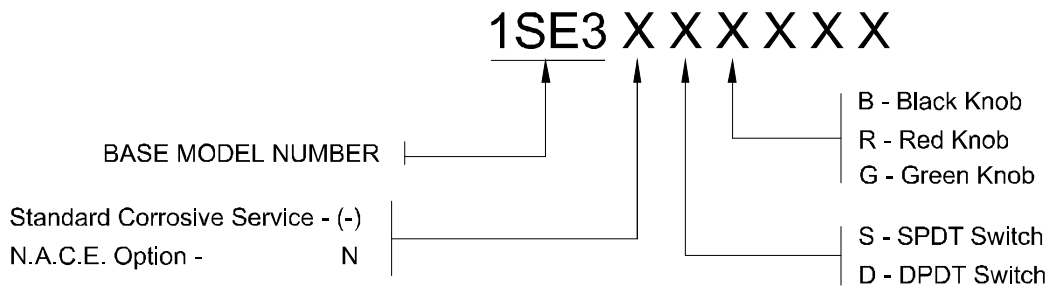
RELAY OPERATION RANGE (BASED ON PROBE)	100 PSI (6.7 BAR) MINIMUM 10,000 PSI (690 BAR) MAXIMUM
AMBIENT TEMPERATURE RANGE	-20° TO 250° F -29° TO 122° C

REPAIR KIT

- 1S-022-000

OTHER TEMPERATURE RANGES AND SEAL COMPOUNDS AVAILABLE UPON REQUEST

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