FEATURES:

- Direct Replacement for Ultrasonic Gap Switches, RF Capacitance Switches, Float Switches and Other Technologies
- Immune to Low to Medium Coating or Build-Up on Sensor
  - Temperatures between -40°F to 250°F (-40°C to 121°C)
  - Pressures to 2000 psig (138 bar)
  - Viscosity up to 20000 cP
  - Density from 0.5 SG
- Robust Sensing Element
- Standard ¾” MNPT Process Connection
- Single Compartment Housing with Viewing Cover
- Field Selectable Parameters with External Magnet or Internal Pushbuttons (Fail Safe, Density)
- Modular Electronics with Alarm Status LED
- Continuous Self-Test Diagnostics
- Extended Probe Lengths to 120 in. (3048 mm)

BENEFITS:

- No Mechanical Moving Parts
- Externally Visible Status LED
- Maintenance Free
- No Calibration
- Set It and Forget It

APPLICATIONS:

- Overfill Protection
- High and Low Level Alarm
- Oil Tank Farms
- Fine Chemicals

SPECIFICATIONS

Mechanical
- Housing Type: Single Compartment Powder Coated Aluminum with Glass Viewing Cover
- Electronics Temperature: -40°F to 158°F (-40°C to 70°C)
- Specific Gravity: Adjustable High or Low Specific Gravity Setpoint
- Viscosity: Up to 20,000 cP
- Process Temperature: -40°F to 250°F (-40°C to 121°C)
- Process Pressure: 0 to 2000 psig (138 bar)
- Process Connection: ¾” NPT (standard)
- Probe Length: 3-3/8” (86mm) Standard to 120” (3048mm)

Approvals
- Factory Mutual System: XP CL1, Div1&2 ABCD, CLII, III EFG
- Canadian Standards Association: XP CL1, Div1&2 ABCD, CLII, III EFG
- GOST Russia: 1ExdIICT6

Electrical
- Input Power: 120-250 VAC, 50-60Hz
- 18-36 VDC
- Relay Contact Rating: 1 x DPDT Resistive: 8 Amp @ 250 VAC; 8 Amp @ 30 VDC
  - Inductive: ½HP @ 240 VAC, ½HP @ 120 VAC
- Repeatability: 0.1” (2.6mm)
- Static Protection: Peak Surge Current: 800 Amps; Clamp Voltage: 75 Volts
- Selectable Fail-safe: High or Low
- Cable Entry: 2 x ¾” NPT

RS80 Shown with Standard Stainless Steel Probe Finish

Resonator Sample Applications
ORDERING INFORMATION
RS80 / a / b / c / d / e / f / g / PL:
/a Housing
   A1      Single Compartment Aluminum Housing
   A1W     Single Compartment Aluminum Housing with Glass Viewing Cover
/b Process Connection
   P7      ¾” MNPT (Standard)
/c Sensor Material
   S6      316L SS (Standard)
/d Probe Finish
   X       Standard Finish
/e Power
   1       18-36 VDC
   2       100-136 VAC
   3       200-245 VAC
/f Options
   X       None
   MM      M20 Conduit Connection Brass (CSA Only)
/g Approvals
   X       No Approvals
   FMX     Factory Mutual Standards (FM) Explosion Proof
   CSX     Canadian Standards Association (CSA) Explosion Proof
   GR      GOST Russia
/PL Probe Length
   3-3/8” (86mm) Standard, Specify extended lengths in 1.0 in (25.4 mm) increments up to 120 in. (3048 mm)

PRINCIPLE OF OPERATION
The Resonator utilizes a piezoelectric driven tuning fork that exhibits a large change in resonant frequency when immersed in any liquid. A “smart” microprocessor-based electronic unit keeps the sensor in a resonant state as it changes from dry to wet or wet to dry. The resonant frequency is continuously monitored for changes created by a wet or dry sensor and an alarm is provided via a relay. An important feature of the Resonator is that its resonant frequency is not significantly affected by coating on the fork until the space between the forks is bridged. The Resonator’s ability to identify true liquid level in viscous, coating or aerated liquid is unparalleled. The self-test option checks for fault conditions such as crystal damage and excessive product build up on the sensor. Applications include redundant high/low liquid level without concern for parameters such as specific gravity, dielectric constant or mounting position of the sensor.

DIMENSIONS
3/4” (19mm) FNPT Conduit
3/4” (19mm) MNPT Standard
11” (279mm) Standard
4 3/8” (111mm)

MODULAR ELECTRONICS CONNECTION DIAGRAM
RS80
LED 1
LED 2
S1
S2
C1
NC1
NO1
C2
NC2
NO2
24 VDC
120 VAC
240 VAC

*Trip Point 3/4” from end probe type

Note: See RS85 Data Sheet (RS85-0202-1) for optional process connections, coatings and materials of construction for more difficult applications.